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OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.
XENIA, OHIO.

VOL. VI.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH,
TOLEDO, OHIO.

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OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

VOL. VI. JANUARY 1, 1886. No. 1.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

PYORRHŒA ALVEOLARIS, INFLAMMATORY ALVEOLITIS, PHAGEDENIC PERICEMENTITIS.

BY A. W. HARLAN, M.D., D.D.S., CHICAGO.

[Read before the Ohio State Dental Society at Chillicothe, O., October 29, 1885.]

SYMPTOMS.—Incipient pyorrhœa may be observed at any age after the attainment of the tenth year. The teeth most frequenlty affected are the upper incisors, bicuspids, first and second molars; lower molars, second bicuspids and the incisors. Blunting of the septum of gum between the teeth; detachment of the peridental membrane at the gingival margin, partially or completely encircling the tooth; promotion of a pocket or pockets of varying depths, the gum presenting a slightly reddened, sometimes thickened appearance, deep red, or purplish color outlining the pocket. Wasting of the alveoli on the labial and lingual surfaces of the teeth, deposits of serumal calculi on the surfaces of the roots beneath the detached gum, pus exuding on pressure, teeth become loose and drop out, or become irregular. Salivary calculus may be associated with pyorrhœa alveolaris, but is easily distinguished from it by the gums bleeding freely when it is removed, and by the quick subsidence of the inflammation and the rapid reattachment of the gums to the teeth.

Etiology and Pathology.—Any injury of the dental ligament, as the extraction of an adjacent tooth, rapid wedging, forcing rubber bands, cloth or ligatures around the teeth, injudicious use of tooth picks, the use of clamps over teeth to retain the rubber dam, salivary deposits (rarely), lack of cleanliness, use of brushes too stiff and not properly constructed, hereditary tendencies, or any inflammation of the gums sufficient to detach the peridental membrane, furnishing a spot for a *nidus* around which may be deposited serumal or salivary calculus. Such careful observers as Witzel, Arkövy, Iszlai, Black and others state that pyorrhœa alveolaris is a specific, infectious disease, proliferated by a micrococcus not yet classified which may always be found in the pus exuding from the pockets. It is believed to stand in a causal relation in its inception. Pyorrhœa alveolaris may and does exist independently of calcic inflammation. Numerous cases have been observed where salivary deposits coated the teeth of one portion of the mouth, and other teeth in the same mouth, were affected by pyorrhœa.

Treatment.—Until recently, dental surgeons have almost despaired of a successful treatment. At present it is claimed that many teeth formerly lost may be saved. All deposits are removed by thin flat scalers without mutilating the gums; this is accomplished by a pushing motion : the edges of the alveoli are excised or scraped and the pockets syringed one at a time with peroxide of hydrogen, to cleanse them of debris and destroy bacteria. After which, solutions, in water, of iodide of zinc (grains VI-XII-XXIV), or, a saturated aqueous solution of chinolin tartrate ; or carbolic acid crystals 2 parts, (oil resorcin) wintergreen 3 parts, oil cinnamon 1 part, are to be injected into the pockets twice a week, to stimulate the formation and growth of new tissue around the roots of the teeth. Persistency in this treatment it is confidently asserted will lead to a cure. In case the teeth are very loose or out of line they should be held together with fine binding wire, pending the treatment.

WANT OF ROOM FOR THE ERUPTION OF THE PERMANENT TEETH, ESPECIALLY THE THIRD MOLARS.

BY C. R. BUTLER, M.D., D.D.S., CLEVELAND, O.

[Read before the Ohio State Dental Society, Chillicothe, October, 1885.]

Rarely do we see any marked irregularity in the arrangement of the temporary teeth. But it is not so with the permanent. A fairly arranged set of teeth at the age of eighteen or twenty years among Americans, is not the rule, but rather the exception.

The first molars of the permanent set are generally erupted when the child is six years old, with crowns rather more bulky than are those of the molars that appear later. And these serve a very important function. Their roots being completely formed before the temporary teeth are shed, they sustain the force of mastication between childhood and youth, thus giving the normal stimulus to the salivary glands, that the food may be thoroughly insalivated before deglutition. They also prevent pressure upon the but partially developed teeth of replacement. The jaws having sufficiently elongated, these teeth take position just back of the twenty temporary ones.

Within the next six years, the jaws elongate backwards, to make room for the second, and for the third molars. And, of the third molars, I desire now to speak more particularly of the inferior ones. Being situated in the angle of the inferior maxillary bones, much discomfort, and often serious trouble are experienced, for lack of room for their eruption.

The general structure and arrangement of the full complement of thirty-two teeth, give a fair index to the anatomical and physiological make-up of the individual.

The shortening and narrowing of the lower portion of the face, and the want of room in the maxillary bones, in the American race of to-day, are apparent to even the casual observer. And the multitude of ailments that confront the general practitioner, and the specialist as well, as the days go by, are found to be more and more of a nervous character.

To ascertain the appropriate remedies, and the best methods of applying them, for the alleviation of disease, and the correction of deformity, is the prime object of our present coming together.

Doubtless all have realized the truth of the text "Behold how great a matter a little fire kindleth!" and a tooth is often the cause of serious trouble; not only local, but constitutional and general, through nervous irritation. The typal number being still retained, and the size of the teeth not decreased in proportion to the restricted territory prepared for their reception, a writer has claimed that we have, in these facts, the explanation of many cases of irregularity and decay of the teeth. The trouble lies in the inheritance of incongruous jaws and teeth from the parents. The father may have large teeth in a corresponding jaw, and the mother, small ones in a small jaw; and while these both may have perfect sets, the inheritance may be most unfortunate for the children. The teeth being inherited from the father, and developed in a small jaw copied from the mother, the sad results are often seen in the mouths of children that come under our care.

In consequence of the limited space between the second molar and the base of the outer, or vertical portion of the ramus, the erupting third molar is forced against the lateral ends of a fixed circle. In consequence of the non-appearance of these teeth till the age of eighteen or twenty, or even when they present earlier, the inferior maxillary bone having become well solidified, and the preceding teeth being more or less crowded, serious inflammation is caused, demanding surgical or other relief.

The text books, and periodicals of dental surgery give but very little, if any suggestive treatment for such cases, except the removal of the second molar, to make room for the imprisoned crown, a treatment that would, as a rule, show a want of skill equal to that of the general surgeon who would advocate amputation, in fracture of the forearm, before trying to save the injured member by conservative treatment.

To sacrifice a tooth of the most important class, to make room for one on the extreme end of the jaw, with imperfect occlusion, seems unwise except in extreme cases.

The dento-maxillary nerves, being distributed from the Gesserian ganglion, it is easy to see how reflex nerve irritation is caused by one of these offending teeth.

Having had quite a number of these troublesome cases presented for relief during the past year, I thought it might not be altogether uninteresting to make them the basis of a brief paper. Situated as they are, it is not strange that we should often find an aggravation of throat troubles, deafness, stiffness of the muscles of the neck and face, facial neuralgia, local paralysis, prostrating pain, with severe abscess, and other local and systemic disturbances, caused by one or more of these impacted teeth.

Young women are often annoyed severely by these troubles, especially at the approach of the menstrual periods. I could mention special cases in which the distress was very great. Some had suffered from nervous troubles that did not yield to treatment. One had, for some time, complained of a dull pain in the back of the head and neck, had often difficulty in swallowing. The third molars, above and below, were removed, and in a few days there was no further trouble in swallowing, and she experienced general relief. In two other cases of similar trouble, relief was obtained by removing the inferior ones.

Often palliative treatment must be adopted for a time, when depletion of the gums, clipping away the portion overlying the tooth will prove sufficient to secure present relief.

Extraction should not be resorted to while the parts are much inflamed, if it can be safely deferred. Well adapted forceps, and other appliances, are not usually at hand to reach such cases in the best possible manner.

The superior third molars often demand attention. For want of room they are sometimes forced outward, causing muscular irritation by excoriating the inner portion of the cheek; but they are more easily removed than are lower third molars.

ALVEOLAR ABSCESS AND TREATMENT OF DEAD TEETH.

BY DR. H. H. HARRISON, CADIZ, O.

[Written for the Ohio State Dental Society.]

I HAVE been watching the practice of many operators in the dental profession for a considerable period, and it seems to me that there is, with very many, a lack of proper conception, or want of a true physical diagnosis in the pathological condition of alveolar abscess, and also a misinterpretation of the principles involved in the treatment of dead teeth.

It is a very important feature in any diseased condition to know its true character and the cause that produces it if possible, before we can intelligently treat the case. To blindly ignore this and ignorantly treat disease, seems to have at least the odor of quackery. In order to ascertain the true condition of any disease, we must begin with the most prominent symptom and follow every avenue in detail, recording at each successive step any fact that may be developed.

In the first place, abscess in any part of the body is the result of inflammation. And now, as we proceed, we must, if possible, discover the cause of the inflammation, and while this is obscure in many cases, in others it is perfectly plain, and such it is in alveolar abscess as a rule. We have inflammation of the nerve pulp of a tooth, caused by exposure to foreign substances, by thermal changes or by accident, assisted possibly by an enfeebled or depraved condition of the general system. This, of course, produces periosteal inflammation. but may not result in abscess. But a continued inflammation produces death of the nerve, as it does in any other tissue of the body. After death comes decomposition; nature in reducing the once living structure to its original elements, accomplishes its work by division and subdivision. In this chemical laboratory are manufactured poisonous gases inimical to vital tissue, which require more space than the living nerve, they find their exit at the most vulnerable point of this bony enclosure—namely, the apical foramen of the root, which but for this would yield to the extreme pressure. As they pass through the apical opening they come in contact with and poison the living tissue, producing inflammation of the surrounding parts. Nature, true to herself, throws around the diseased part, a cordon or sac to prevent further injury, and to carry away the wasting elements. This is the true alveolar abscess that gives us much trouble and our patients much pain.

I do not propose to offer any new treatment for this condition, but only wish to connect it with the treatment of dead teeth, to explain a principle not recognized by many in this operation. Taking the foregoing as the correct theory of alveolar abscess. we advance to the treatment of dead teeth preparatory to filling. If the decomposition of the animal tissue results in inflammation and abscess, then the removal of the dead pulp before abscess has been established, will prevent its formation. Following on logically we can confidently say, that the pulp cavity being thoroughly filled with an incorruptible and healthful material, we shall never have abscess in a tooth thus treated at any subsequent period, at least not from the cause just mentioned.

In this prepartory treatment of dead roots we ought to rely more on the instrument and not so much on medicine for cleansing. Nerve broaches, drills and excavators are better disinfectants for this purpose than any medicine you will find, and in four-fifths of the cases presented you can fill at first sitting as well as treat with medicines for a month and then fill. Indeed I am almost ready to say that I cannot conceive a case in which success is dependent upon treatment with disinfectants, for if you cannot penetrate with an instrument, the filling operation is only an experiment, and could be made no more certain by a disinfecting treatment. 'Tis true it might be a benefit for a brief period by neutralizing the poisonous material within the cavity, but its effect would soon pass, and as soon as the cavity is filled with fluid, subject to decomposition, trouble would arise.

Hence, I seldom use disinfectants, but fill as soon as cleansed with the instruments, relieving my patients of frequent sittings, and thereby keeping my business under better command. A short time since saw a case where a lateral incisor had been treated with disinfectants for two years, the tooth quite black, and no attempt had been made to fill at all, and I don't know when it is to be filled—possibly not until the millennium sets in. This by a reputable operator in a city of our own State.

In conclusion, let me say a few words about the filling operation. Every operator chooses his own plan and selects his own material, and I care but little about this if he makes it a success, for I think success is not dependent alone upon one man's pet plan of operating. Of course some plans seem to be more practical than others, and we should all strive to be practical. But the principle involved is certainly to make a filling of incorruptible, healthful material, perfectly adapted to all the inequalities of the cavity made vacant by the removal of the nerve. This covers all the ground, and you can exercise your own individuality in accomplishing this end, and success will be yours and your patient will be happy.

TREATMENT OF THIRD MOLARS.

BY A. BERRY, D.D.S., CINCINNATI, O.

[Read before the Ohio State Dental Society, Chillicothe, October, 1885.]

The question of the proper treatment of impacted third molars, is often of grave importance. A patient complains of trouble in the region of an inferior third molar, often slightly elevated above the alveolus, and nearly or quite covered by the gum, which is highly inflamed, exceedingly sensitive and painful.

In probably a majority of such cases, when the annoyance is recent from a third molar being erupted at about the usual period, and firmly imbedded, indicating difficulty in its removal, if section of the gums and local treatment fail, it is well to extract the second molar, when the swelling and pain will usually soon cease, and the third molar take the place of the second.

But when the trouble has been of long standing, rendering it probable that the advance of the third molar has been permanently stopped, the necessity of its removal is clearly indicated. Now, serious fears may confront the operator. Insuperable difficulty, or want of fortitude in the patient, may cause failure in an effort to extract the tooth. Vivid recollections of trouble in similar instances, as well as the possible Herculean task, present themselves in fearful array to the mind of the operator. He recollects that an able dentist of long and large experience, after great annoyance in the matter, was mulcted by verdict of a jury of several thousands of dollars, as the result of an attempt to extract a third inferior molar under exceedingly difficult conditions.

But he has no way of escape. He cannot, like the neighborhood tooth-puller, say to the patient: "The roots of this tooth are hooked under the jaw bone, and it cannot be pulled without breaking the jaw." He belongs to the Æsculapian family. His work is to prevent or alleviate human suffering; and he must do something to afford relief to his patient. He must remove the tooth or make a failure. He prepares the patient for the ordeal as he thinks best, telling him, perhaps, that the roots of the tooth may be crooked, causing difficulty in elevating it, and that with a poor chance to apply force, the operation may be tedious as well as painful; but encourages him with the prospect of relief.

With his Physick's hawks-bill, and several small beaked forceps and elevators of various forms and sizes, and an anæsthetic for local application, the dentist is ready for action. After careful examination to decide as to the best manner of applying force, he commences with, perhaps, a small elevator deeply inserted between the second and third molars, and makes an effort to loosen and raise the offending tooth. If he succeeds and can grasp it with forceps and extract it, even after prolonged effort, he has reason for congratulating his patient as well as himself. But in some cases if he attains this result after a half hour or more of persistent effort, causing intense suffering, he may consider it a fortunate ending of the dreaded ordeal.

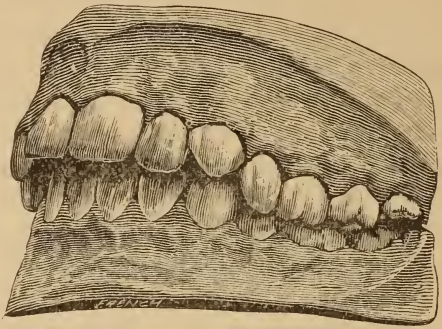
After giving suitable directions, and charging a fee considerably larger than for ordinary tooth-drawing, he dismisses the patient. For all this severe mental and physical effort, the principal reward of the dentist is the consciousness of having done his duty. But his trouble does not always end here. Severe inflammation and pain may follow, requiring further treatment, and convalescence may be so tardy as not to be agreeable to the operator nor satisfactory to the patient.

Most persons, fortunately for them, suppose that all teeth can be extracted readily; not knowing the difficulties in some instances with third inferior molars. As every one considers himself a competent judge, the dentist, in cases like this, may bless his stars if the patient and all his friends do not make the neighborhood lively with tales of his awkwardness in being so tedious and causing so severe suffering in extracting a tooth.

A CASE IN PRACTICE.

BY GEORGE W. KEELY, D.D.S., OXFORD, OHIO.

THE case here illustrated is of a Miss aged eleven years. It is not an exceptional one, but may often be seen (to a greater or less extent) in the practice of every operator who is a careful observer of the injurious effects of the *premature removal of the temporary molars.* The temporary teeth have a very important mission to perform, and every one should be carefully preserved, until that mission is fully accomplished. These teeth are as important to the child for the purpose of mastication, as the permanent ones are to the adult. It can be seen from this cut that



the superior *temporary* molars are in place, the first *permanent* one being fully developed, and the 2nd one just appearing. In the inferior arch the first and second permanent molars are fully developed, the first one being in contact with the first bicuspid. This is also the case on the right side. On the outside, opposite the proximal surfaces of the first bicuspid and first molar, on both sides of the inferior arch, the second bicuspids are just ready to make their appearance through the gum, making a prominence on the model as large as the crown of the tooth. [This is wholly ignored by the artist in the cut. For such a blunder there can be no valid excuse.]

When this child was five years old she was brought to me with the inferior temporary molars badly abscessed, when I declined to remove them, and opened into the pulp cavities and let off the pus, thus giving relief. I explained to the parents why I did this, and the evil consequences that would surely result from their removal before the first permanent molars were erupted. I also informed them that this same trouble was likely to occur again, but could be relieved in the same way, and also told them under no circumstances to allow their extraction. Soon after she was taken to their family dentist, and the teeth were removed, he telling them, I "was a crank and could not prove my theory correct." The premature removal of these teeth caused the anterior ones to fall back, and also the earlier eruption of the first permanent molar, which came forward and took up the remaining space belonging to the second bicuspid; and this caused the earlier eruption of the second molar, as it was given additional space, which was the reason for its full development, while above, the retention of the temporary molar retarded the eruption of the second molar, which is just appearing, as stated before.

As a rule, when the temporary molars are prematurely extracted. the first permanent one will erupt earlier, coming forward and taking up a part, or the whole space designed for the second bicuspid, thus crowding the anterior teeth, and often breaking up the normal articulation of all the teeth. It can be seen by the cut that the six superior front teeth are very prominent; so much so that the features and expression of the face are distorted, and correct enunciation is made difficult.

There is no reason to suppose this case is an inherited deformity, for both parents have normal arches; therefore we claim this was wholly caused by the premature removal of the temporary molars, for the reasons already given.

The roots of these molars, if allowed to remain, will have a tendency to keep the first molar in place when erupting. It has been claimed that, as the crown of the second bicuspid is formed before the eruption of the first permanent molar, it will necessarily keep it in place. This theory is proved incorrect by scores of stubborn facts. We have models of both arches, when the temporary molar was prematurely removed on one side, and not on the other. On the one the second bicuspid is wholly or partly crowded out of line, and on the other side, all the teeth are regular, except that the centrals incline to the side where the premature removal occurred. We have others where both second bicuspids are out of line, but generally in the palatine surface, and others where the second bicuspid had made a desperate effort to come in place, but was so crowded by the first bicuspid and first molar, that only a part of the crown is through the gum.

We realize to the fullest extent the patience and perseverance required to treat these molars for our little patients, particularly. as is generally the case, we have to fight the parents and try to educate them. It is to be greatly lamented that there are so many in the dental profession who never hesitate for a moment to apply the forceps to these molars of their little patients, seeming never to have a thought in regard to the injurious consequences sure to follow. In this case the superior temporary molars were removed after the impression for this model was taken, they being held in place by their crowded condition, the retarded bicuspids below, could be seen ready to come in place.

ASSOCIATION WORK.

BY J. TAFT, M. D., D.D.S., CINCINNATI.

[Read before the Ohio State Dental Society, Chillicothe, October, 1885.]

The first dental society in this country, the American Society of Dental Surgeons, was organized in 1841, forty-four years ago. The total membership of all societies in the country, is 4,280, this includes both active and honorary members. This number may be reduced at least one-third, because of persons having membership in one or more societies, making the estimated number, 2,850. Take from this number, the honorary members—about 300, and it leaves the active membership of all the societies about 2,550; not over one in five in the entire profession, is in any wise connected with association work—and if from the above number, is taken the names of those members who do not actively engage in the work, the number would probably be reduced below one thousand; thus, not over one in twelve or fourteen, labor in this direction for the profession. It has generally been the aim, in our societies, to present by papers and discussion, various practical questions of the profession, those pertaining to methods and modes. Not only in public discussion, but in special conference, much has been accomplished in the way of making the particular attainments of individuals a common inheritance, and in this way, not only does benefit accrue to others, but the giver, by the very contact, receives new stimulus, and oftentimes new thoughts and ideas.

Not only by this means has knowledge been increased and extended; but methods of demonstration by clinics has been utilized, to the benefit of multitudes in and outside of the profession. For the introduction and practical use of this mode of instruction in dental societies, the profession is chiefly indebted to Dr. W. H. Atkinson, who, with a prophetic eye, in 1859, forecast the possibilities of associated work in our department of the healing art. In associations, men being brought together, have learned the strong points of their fellows, and the weak points, each of himself; these lessons are always valuable. The strength and attainments of others may by right means become our own, and we in turn, may minister to others, and at the same time our own feebleness be converted into strength and power. The societies have done much in molding the character of the profession, and in elevating its status; this influence has been operative not only upon those actively engaged, but it has made a marked impression on those who contemplate entering its ranks. The time has passed, when a young man can enter an office, and by agreement, complete his course of instruction in from three to twelve months and go out with an endorsement by his preceptor, as entirely competent to discharge the varied and difficult duties of the dental surgeon. The power of associative influence has made a marked impression upon our special institutions of learning; as our associations have from time to time taken higher ground and advanced positions, our colleges have been compelled to recognize the fact and modify their plans and methods accordingly.

The possibility of regulating the practice of dentistry by legal enactments, was until a comparatively recent period, entertained by but few, but as it came to be discussed and studied, it received more favorable consideration, until now almost every State in the Union, at least that has a State society, has a law regulating the practice of dentistry, and one of our Territories also has a society and a law similar to those of the States. Our societies have also exercised a healthy stimulus upon our literature; many have thus been induced to write, who otherwise would have done little or nothing in this direction.

That association effort has done much for the development and up-building of the dental art and science, none will deny, indeed there would have been but little progress compared with that made, without such organized work.

However pleasant and gratifying it may be to review the work accomplished in the past, it will not be without profit to forecast the tendency of the future, and to suggest, and even plan methods that seemingly might be easily carried out.

While with institutions, as with individuals, there is a disposing power that rules over the plans and devices of man, yet, we are fully warranted in making plans and devising methods of work which will always be sure of success in proportion as they may be in harmony with that over-ruling power. I now propose to note a few points in which association work might be improved. No criticism need here to be indulged in, upon the conduct and work of these organizations, let us rather look upon the bright side and make the most of what has been accomplished, and seek for more and better things in the future. All will concur in the suggestion that each and every State should have its dental society, and even each Territory have ten or more practitioners who could conveniently meet. Every district having ten or more reputable dentists should have its organization embracing towns within convenient distances. The society of each State should meet annually, those of the cities, monthly, and those of the smaller towns and districts, as often as convenience would warrant, perhaps from two to six times a year. There are four classes of societies; the American or National, the State, City and District. The object is usually stated in the organic law of each, to be, to cultivate good-fellowship, and promote the interests of our art and science. The work that may be done by each of these classes will necessarily differ in some respects, in others there will be work common to all. The American Association is a delegated body whose members come from all other organizations of our profession in the country, so far as they wish to be represented, and this is almost universal. This is not a legislative body, further than its own affairs are concerned, notwithstanding it has an interest in, and should exert a wholesome corrective and stimulating influence upon all other societies, particularly those represented. This fostering care was exercised more in the early periods of the society than in later years, it seemed then to recognize much more fully the importance of this work than now. For several years it had a committee whose duty it was to aid in the organization of local societies, and doing whatever was practicable in the way of aiding those already organized. A report was made by that committee on the state of the Association and the condition of the profession, generally. While the presentation and the discussion of modes of practice, and the details pertaining to it are interesting and valuable, would it not be better that this body give more attention to the general interests of the profession, than it has been disposed to do for some years past? The great moving and controlling influences that are operative in the profession, should certainly come within the purview of this body, and though it is not invested with legislative power, yet, in an advisory way, it may serve the interests of the profession in a very marked degree; in some respects directly, and in others indirectly, but resulting in great good. The dental profession of Great Britain is outstripping that of this country in some respects; there the law regulating the practice, involving registration and all the details of its requirements, is a unit, uniform in action and results. There, the profession is brought to a uniform standard of requirements, registration is universal; violaters of the law are punished. In this country perhaps it is not possible to attain the same uniformity in respect to requirements and law, as in England. Each State enacts its own law, and adopts such requirements as it may see fit, and many of those laws are defective. May not the American Association exercise a wholesome influence over the various State societies here represented, in bringing about a more uniform standard of requirements, in making registration requisite in every State. It certainly is within the province of this body, to labor with this end in view, not only of elevating the standard of professional attainments, but in producing uniformity in all the great interests of the profession, so far as practicable. Declarations have been made in reference to our modes of education, which has made decided impression, and improvement, in some respects. All societies and institutions here represented, should feel entirely at liberty to ask advice and direction in all matters where they might regard advice as valuable.

The time and work of our State Society should be given, more to the broad interests of our profession, and relate less to the matters of practical detail. Our State societies can well afford to foster those of more local character; every State should look well to the execution of its State Law. There are also certain aspects of the educational problem which they may well consider, and indeed, act upon. It is proper and desirable that all State societies, and all local societies should consider well, the subject of pupilage. The qualifications and character of those who are now entering, and are hereafter to enter our profession, is a very important question, and one which the societies can reach in a very efficient manner. They can decide as to the qualifications of those whom the members will encourage to become students.

No one, now-a-days, who thinks of entering the profession, will attempt to enter upon a course without consulting some one whom he regards as competent to give advice, and in a majority of instances such persons interested, are members of some dental society. By establishing a standard, and adhering to it, great good would be accomplished.

It has already been shown that a very small proportion of the profession is embraced in our dental societies. Laboring to build up the membership in every one, would be productive of great good. Instead of there being but 2,500 members of the profession in our societies, there would be from eight to ten thousand, and there would be, if all those in our societies would go actively to work with a view of building up in this respect. Two-thirds to three-fourths of all our societies could be instrumental each year, in bringing in from one to three new members, by well directed effort. Why shall this not be done? Every State society should become incorporated. To become an incorporated body is a very easy matter; for this, the common law makes ample provision. Another direction in which effort may be made, and with profit too, is where a society always meets in one locality, the establishment of a library, apparatus, etc. Such an establishment would constitute a nucleus that would involve permanency and stability, and would be of immense value and benefit in many respects. In such a museum, specimens and appliances would find a safe place of deposit, where they would not only not be lost or destroyed, but would be utilized for the information of all the members. Apparatus for illustration could be accumulated, but more particularly the collection of a library would prove valuable. Very few in our profession have access to more than a small number of our standard works. The establishment of a museum and library would be an element of strength as well as valuable in other respects.

There are really four classes of societies; the National, the State, the District and the City, each having some distinctive work. The chief value of the National society is the unifying influence which it would exercise over all bodies represented in it, and in fostering association work generally.

In regard to State societies, the question of a fixed habitation is one worthy of consideration.

City, or mere local bodies, will find much to occupy the attention that would not be practicable in those of a more migratory character; thus it would appear that each class of associations has a distinctive form of work, to which special attention should be given, and which if well done, would yield greater results than have yet been realized.

DENTAL LITERATURE.

[Reported for the JOURNAL.]

MR. WM. BEER, of New Castle-on-Tyne, Eng., at the meeting of the Ohio State Dental Society, Chillicothe, October, 1885, gave an interesting statistical review of dental literature from the earliest times. We can give only the figures.

PERIODICALS.

Total number of periodicals,	99
Current " "	41
Total number of volumes of periodicals,	573

Divided as follows:

AMERICA,	65	appeared,	20	are current.	322	volumes.
ENGLAND,	9	"	4	"	65	"
FRANCE,	8	"	4	"	55	"
GERMANY,	6	"	4	"	60	"
DENMARK,	2	"	1	"	13	"
ITALY,	2	"	2	"	28	"
SPAIN,	2	"	1	"	15	"
CANADA,	1	"	1	"	6	"
CUBA,	1	"	1	"	6	"
BELGIUM,	1	"	1	"	1	"
RUSSIA,	1	"	1	"	1	"
AUSTRIA,	1	"	1	"	1	"
Totals,	99	"	41	"	573	"

SOCIETIES.

United States,	110	societies,	14	publish Transactions.
Canada,	2	"		
England,			2	" "
Cuba,			1	" "

BOOKS.

I.	GERMAN; Austria, Holland, Norway, Denmark, Sweden, Switzerland, - - - - - -	770
II.	FRENCH; Belgium, Switzerland, France, - -	729
III.	ITALIAN and SPANISH, - - - - - -	50
IV.	ENGLISH, - - - - - - - -	240
V.	AMERICAN, - - - - - - - -	328
	Total number, - - - - - -	2,117

YEARS.	Totals.	German. I.	French. II.	Ital. & Span'h. III.	English.	
					English. IV.	American. V.
Before A. D. 1600 -	16	10	2	4		
1600 to 1650 -	20	17	3			
1650 " 1700 -	65	60	3		2	
1700 " 1750 -	91	73	15	2	1	
1750 " 1800 -	207	120	55	6	26	
1800 " 1850 -	719	255	250	9	90	115
1850 " 1885 -	1009	245	401	29	121	213
Totals - -	2117	770	729	50	240	328

Correspondence.

"I charge you that this epistle be read."

CLARK LOWELL GREGORY, D.D.S.,

DIED at Ontario, California, October 9, 1885. of consumption, in the thirty-first year of his age.

Dr. Gregory was born in Albion, Mich., January 29, 1855; was a graduate of the Dental College of the University of Michigan, class of 1879; commenced practice in Coldwater, Mich., and in 1880 removed to Chicago, where he left a very successful practice in April last hoping for restored health in Southern California.

He died as he had lived, an earnest Christian, with full assurance that he was exchanging pain and weakness here for eternal happiness in the world beyond. *

Compilations.

"Gather up the Fragments."

TRANSPLANTING TEETH.

Replanting is not transplanting. I suppose all dentists are in favor of replanting under certain conditions. If a tooth with but one straight root is knocked out by accident, or is extracted by mistake, certainly it ought to be immediately replaced. Still it is not probable the plan of extracting to render filling easy will ever be extensively practiced.

And in the present and prospective states of society it is not likely that transplanting will prevail. Free servant girls are not likely to sell their pretty teeth, even to please proud and wealthy employers.

The operation of transplanting is one of the oldest known to dental practice. By the kindness of Dr. A. Berry we are in possession of a letter of Dr. James Gardette, which was published in the *Medical Recorder*, of Philadelphia, in 1827, and republished in the *American Journal and Library of Dental Science*, in January, 1850, at which period Chapin A. Harris, Amos Westcott and William H. Dwinelle were editors. They inserted it at the request of, and with a prefatory paper by Dr. C. T. Cushman, of Columbus, Georgia. As these men were all regarded as professional lights in their day, one of them being still spared with us, and as we know that but few of the readers of the Journal have files of the good old periodical, we feel that we can do nothing better, in setting forth a history of dental literature, than to follow the example of those early editors, and give the whole thing to our readers, most of whom have been born since the original appearance of the article.

Letter from Dr. C. T. Cushman, *to the Baltimore Editor.*

Columbus, Ga., Nov. 7th, 1849.

Dr. Harris:

Dear Sir:—In examining some old volumes of medical journals, in a friend's library, I came across an interesting paper by the late Dr. James Gardette, dentist, of Philadelphia—the same alluded to by his biographer, Dr. E. B. Gardette, in your Dictionary of Dental Science, art. Gardette. The subjects of it are, the *Transplantation of Teeth* and the *Luxation of Teeth*, illustrated by reports of cases; and I regard it as extremely valuable, in affording the enlightened views and vast experience of so distinguished a *father of dentistry*, as was, emphatically, Dr. Gardette. I therefore felt a strong desire to have it preserved in my own library, as well as that the information it contains should be disseminated among the profession of the present day; for I do not know of any other on record, within their reach, that contains similar reports, showing the *practical results* of the methods discussed.

Mr. Hunter gives no case of transplanted teeth, excepting one operation, performed with a view to arrest a diseased action in the *alveolus*—which he regarded as successful;* and another, showing their liability to caries.†

The serious and *fatal* cases, cited by Dr. Gardette, incontestibly prove the error of Mr. Hunter's preconceived opinion, that that disease could not be so communicated from one person to another:—"not that I believe it possible to transplant an infection of any kind from the circulating juices."—*Hunter.*‡ His work, likewise, gives but one case of replacing teeth which had been luxated, and those by accidental violence. They were reinstated "some hours afterwards"—"after a month they were as fast as any teeth in the head;" and had so remained four years, when the case was reported.§

Maury gives two cases of transplantation, (his only ones) in his own practice. In one, the tooth never got firm, and had to be removed in "eight or ten months." The other remained, always in a loose state, fourteen years, and was then just ready to drop out.‖

A fatal case of transplantation is quoted in *Fitch's Dental Surgery*, p. 413.

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* N. Y. ed., p. 20, part ii. † P. 39, part ii. ‡ P. 36, part ii. § P. 37, part ii.

‖ Philad. ed., p. 176.

Besides the interest of the various cases detailed in Dr. Gardette's paper, it contains collateral information that may be new to many of us. It would seem that the author is justly entitled to the credit of having *first* proposed the operation of luxating a painful tooth, in order to sever its nervous connection, and then replacing it in its socket; as, according to his dates, he practiced it about *forty-seven years ago;* which is, perhaps, a year or two farther back than the time it was proposed by *Mr. Fox,* who is generally regarded as the originator of that practice. However, it was not so successful in his hands as in Dr. Gardette's.

It is probable, too, I should infer, that the *first gold plate* for sustaining artificial teeth, made in America, was adapted by Dr. Gardette; the one he cites having been constructed by him *sixty-seven years ago*, "after the mode he had invented about that time."

It will be seen, further, that he gives the name of *Dubois Dechman* as the "first" inventor of porcelain teeth. The credit of this invention is awarded, by M. Audibran, to *Duchateau.* Mr. Fox names *M. Dubois-Chement* as the inventor—who, it is admitted, carried the art of their manufacture from France to England, but kept it always secret. According to Audibran, *M. Dubois Foucon* is the *first who made it public.** I have never before seen the name of Dechman in this connection.

I will conclude, sir, by expressing my earnest hope, that you will renew this paper—a transcript of which I herewith send you—by giving it a deserving place among the valuable literature of our profession—in the *American Journal and Library of Dental Science.* With sentiments of respect,

C. T. CUSHMAN.

[From the "Medical Recorder"—Philadelphia, 1827.]

Observations on the Transplantation of Teeth, which tend to show the Impossibility of the Success of that Operation: supported by a New Theory. By James Gardette, Dentist.

I had, a considerable time since, determined to write on the subject of the transplantation of teeth, from the mouth of a living person into that of another; but my great occupations, and the diffidence I always had in writing English for publication, have prevented me from attempting it; and it is probable I should never have done it, had I not been encouraged by my friend, Dr. Mease, who, after a conversation on that subject, lent me the first volume of the Memoirs of the Medical Society of London, in which several cases of disease succeeding the transplantation of teeth are published, by J. C. Lettsom, M. D., &c., one of which happened in August, 1785. I read the articles with great attention, and found I was acquainted with the first case, which had been related to me by the gentleman, J. Y., now a citizen of Philadelphia, in whom it had occurred a few years before.

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* Traite sur les Dents Artificielles, p. 45.

The reading of those articles, and the observations of my friend, Dr. Mease, who is very much alive to the dissemination of useful knowledge, determined me to write this paper, and at the same time to endeavor to prove the impossibility of transplanting teeth from one mouth into another, with the success expected and promised by the operator, viz., that the tooth transplanted will remain firm, and as useful as the tooth which had originally grown in the jaw.

I shall preface this paper, by informing my readers that I arrived in Philadelphia in June, 1784, and began to practice my profession; and that Mr. Lemayeur, with the reputation of an eminent dentist, had transplanted one hundred and seventy teeth in this city, in the course of the winter of the years 1785 and 1786, as he told me himself, at Baltimore, in the fall of the last mentioned year; and that, of all those transplanted teeth, not one succeeded! Some became firm, and lasted, more or less so, for one or two years, in the sockets in which they had been inserted; but those cases were very rare. In the course of my practice, after that time, I had occasion to extract at least fifty of these transplanted teeth—most of them without an instrument, with my fingers only—and to replace them by artificial teeth. Many accidents occurred to the transplanted teeth, while they were growing firm, and some never got firmly fixed in the sockets at all. I shall now relate some cases of that nature, which happened to teeth transplanted by Mr. Lemayeur, which, I dare say, will be recollected by some persons now living in this city, and perhaps by relations of the persons who were operated on at the time.

Mrs. A. W., a lady of great respectability, had several, I believe *three*, front incisors of the upper jaw transplanted; after suffering for a considerable time, the transplanted teeth not becoming firm, she was obliged to have them extracted, and artificial teeth replaced in their room.

Miss W., a young lady at a boarding school, had the four upper front incisors attempted to be transplanted, but they never became firm; the gums were so inflamed and ulcerated, that the disease was communicated to the lip, so as to form a complete adhesion with it; they were separated by scarification, but the adhesion of the gum and lip could not be prevented, until the transplanted teeth were extracted; which being done, the lip and gum perfectly cicatrized in a short time; the space was then filled with artificial teeth.

I was informed that, about the same time, a young lady of New York, Miss S., had a large front incisor transplanted, in the upper jaw, which produced a disease, judged by the physicians who attended her, to be the *lues venerea.* This young lady was so affected by the disease, that, notwithstanding all the medical aid given her, her health declined, and, after considerable suffering of mind and body, she died.

I was also informed, that a Mr. T., of Virginia, had a front upper incisior transplanted about the year 1790, by the same dentist, the exact time not being remembered, which occasioned much inflammation in the gums and eyes. After some time, the *opthalmia* became severe, and other symptoms justified the opinion that the *lues venerea* had been introduced into the system by the transplanted tooth, which, no doubt, was taken from an unsound subject. I was informed at the time, that Mr. T. had lost his sight, and that after lingering for some considerable time, he died.

Mr. W. H., of Philadelphia, had three upper front incisors transplanted in London, in the year 1784 or 1785, under the superintendence of the distinguished surgeon, John Hunter; the operation was performed with all the care and skill possible, and the teeth became firm in a short time, without any accident of importance. I saw the gentleman in this city about five years after the transplantation of the teeth, which, at that time, were somewhat loose. He consulted me as to the cause of the looseness of the transplanted teeth. On examining his mouth, I found that the teeth of the under jaw, directly under the transplanted ones, struck against them on their internal surface; and I judged that the continued shock occasioned by the under teeth, was the real cause of their looseness; but that the original cause of the under teeth touching the upper, was the inflammation of the gums of the transplanted teeth, which caused their dropping down, and thus to meet the under incisors opposite to them. In order to remedy this inconvenience, I proposed to shorten the under teeth, which I did with a file; I then advised the gentleman to make use of an astringent wash to brace the gums of the transplanted teeth, which were inflamed, and somewhat spongy; my prescription was followed, and the teeth became firm in the course of two weeks. I did not see the gentleman's mouth after this for a considerable time, as he lived out of the city. But having had occasion to see him some years after the time I attended him, I perceived he was without the transplanted teeth, which he had never replaced.

Of all the transplanted teeth that I ever saw, or heard of, none have lasted so long as those transplanted in the mouth of Mr. W. H.; for they remained very firm for about five or six years, and lasted about as long in a loose state, which increased until the teeth either dropped out, or the gentleman extracted them himself with his own fingers; for I am persuaded they were not extracted by a dentist.

None of the teeth transplanted by Mr. Lemayeur, in Philadelphia, remained firm two years; and in two or three cases which I have seen, of teeth transplanted by other dentists, they did not remain firm one year.

Mrs. J. P. had a large incisor of the upper jaw transplanted in London, also under the care of the celebrated John Hunter, in the year 1780, or thereabout (the time which was mentioned to me not being remembered), the tooth became firmly fixed in a short time; but, about a year after its transplantation, a small discharge of matter was perceived issuing from the under edge of the gum, on the left side of the transplanted tooth; but this was not much regarded at the time, being very trifling. The daily attention paid the teeth, by washing and brushing them, prevented the lady from taking notice of its progress for some years.

Having determined to leave London and come to Philadelphia, after the peace of 1783, she had, a few days before her departure, her mouth examined by her dentist, who readily found that a *fistula* was the result of the continual issuing of a small quantity of pus from the socket of the transplanted tooth. It was then judged by him, that the tooth could not remain long in its place; he advised the lady to have a tooth prepared,* that could be easily fixed in the place of the transplanted tooth by a dentist, should there be one in Philadelphia (which, it appears, was much doubted at the time in London). After her arrival in this city, Mrs. P. consulted Dr. W. Shippen, who, after examining her mouth, determined that the transplanted tooth should be extracted. The doctor sent for, and asked me if that was not my opinion; after examining and probing that part of the socket which could be reached with a probe, I found that the left side of the root of the tooth, as also the socket, were completely decayed to the extremity of the root, which was perfectly adherent to the socket on the right side, the tooth being still very firmly fixed, notwithstanding the existing caries.

I told Dr. Shippen that the tooth ought to be extracted, in order to cure or dry up the *fistula.* But there was some difficulty in extracting the tooth without breaking that part of the *alveola* which was completely ossified with the right side of the root; and which I thought I could avoid, by means of an instrument which I would cause to be made by our old and only cutler, Mr. Schively, and which I described to the doctor, as follows, viz., the blade in the form of a narrow straight scalpel, thin, and very sharp-pointed.

After having informed the doctor of my intended manner of performing the operation, he approved it. At the time fixed by the lady, I operated in the presence of Dr. Shippen and a gentleman, a friend of the family (Mr. John Mifflin), in the following manner:

I separated the adherent plate of the socket from the root of the tooth, with my sharp-pointed instrument, with all possible care, in the space of about two minutes; I then removed the tooth with a straight forceps. with the greatest ease imaginable.

The exfoliation of that part of the socket which required it, and the cicatrizing of the gums, required nearly a month, when I replaced a natural tooth, mounted on a gold plate, after the mode which I had invented about that time; this tooth resembled so perfectly the large *incisor* which remained, that no person could perceive the difference.

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* It was a porcelain tooth, made by Dubois Dechman, a French dentist, in London, who first invented the manner of making artificial teeth out of porcelain, and which has been so much improved since by several dentists, and particularly by *Fonzi,* an Italian dentist and chemist at Paris.

The transplanted tooth being examined after extraction, it was found that one half of the root had been destroyed by caries, longitudinally to its extremity, which proved the absolute necessity of its removal.

It is possible that the dentist who transplanted the tooth, finding the root of that tooth too big, filed off some of its thickness (as I have heard of that being done sometimes) to let it go easily in the socket; the periosteum having been removed, the root could not adhere to the *alveola* on that side; and that may have occasioned the formation, and of course the emission, of the purulent discharge spoken of. In order to establish my theory, I shall cite some cases which have occurred to me in the course of my practice, which will prove that a diseased tooth, taken from its socket, the cavity in it plugged, and the tooth replaced in the same socket, will become, in the course of ten or fifteen days, as firmly and solidly fixed as it was before the extraction, and last for a great number of years, and sometimes during life. This is certainly a tooth transplanted, to all intents and purposes, but in the same socket from which it was extracted. If, therefore, another tooth could have been found, the root of which was exactly of the same length, size and form, it might have been placed in the socket of the tooth just spoken of, and it would certainly have become as firm, and have lasted as long as the tooth which had grown in that socket.

I have frequently partially extracted and returned to their sockets, small and large molars, which had been very painful, after having cut the gum on the side opposite to that on which I intended the tooth to fall, in partially extracting it. The purpose of this operation is to separate or rend the nerve asunder, so as to prevent the tooth from giving pain in future; the tooth is then put back into its socket, permitted to become firm, the cavity is then to be plugged; this I always did with full success. It has sometimes happened that a dentist has extracted a sound tooth for a bad one, either by his neglect in ascertaining the tooth to be extracted, or by misinformation from the patient. If such tooth is replaced in its socket immediately after extraction, it will certainly become as firm and useful as ever.

All that has been said will prove, I hope, that a tooth taken out of its socket, and put back in its place, will become firm and useful; therefore, if a tooth taken from another subject, the root of which is of the same shape, length and size, is placed in the socket of the tooth extracted, it will certainly become as solidly fixed as the original one. But the dentist who transplants it must judge that the roots of both teeth are precisely alike in size and shape, before he sees either; that being impossible, the operation can, therefore, not succeed.

In the year 1801, I was requested to call on Miss B., a young lady of great respectability, who had suffered extremely from pain in a front tooth. I found it was the canine tooth of the left side of the upper jaw which caused the violent pain. I was requested to extract the tooth affected; but I observed to her, that the loss of that tooth would be very great, and that it might be preserved by replacing it in its socket after extraction, and that it would become as firm and as useful as ever. After explaining the manner in which I should perform the operation, she consented to have it done, and I proceeded in the following manner: I extracted the tooth with a straight forceps, cleared the cavity of its carious parts, filled it with gold, washed it in warm water, and inserted it in its *alveola;* all this was done in the space of five minutes. I then requested Miss B. to bite a piece of flat cork (which I had prepared for the purpose) several times in the course of the day, and to wash her mouth frequently with a slightly astringent liquid, which I prescribed; if I recollect right, the tooth was perfectly firm the twelfth day. That tooth rendered service to the lady for nearly eighteen years, as I extracted it, I believe, seven or eight years since, having become more carious, and therefore troublesome.

It is to be observed, that it is only the incisors and canine teeth which are attempted to be transplanted, as they have but one root. It is therefore the same species of teeth which I have extracted, plugged and replaced in their sockets; I have performed the same operation frequently in the course of the last twenty-five years of my practice, with the same success as in the case last mentioned. I will, however, detail the particulars of one case, in which the tooth extracted and replaced was a small molar of the under jaw. This operation was performed in the mouth of a lady of this city, Miss ———, and I expected complete success; but, on examining the tooth after extraction, I found that the extreme end of the root being bent, it broke in the extraction, and the piece so bent (about an eighth of an inch) remained at the bottom of the socket; notwithstanding the accident, I replaced the tooth in its socket, after having plugged it, in the hope that a callus might be formed, and a junction take place. The tooth was replaced for nearly a month before it became firm; but no kind of inconvenience was experienced, either by inflammation or pain. The tooth lasted in that situation full six years, when it became troublesome and a little loose. I extracted the tooth in the course of the seventh year; the broken piece of the root remained at the bottom of the socket, which healed completely, and has never given trouble from that day to this, although six or seven years have elapsed.

About eight and twenty years since, I was sent for by Miss G., a young Quaker lady from Virginia, who was in great pain from a large molaris of the upper jaw, and confined to her room. After examining the tooth complained of, I found it to be a very large one, with but a small cavity in the center of its crown. I proposed the operation of partiully extracting the tooth, replacing it, and to plug it when it had become firm. The late Dr. Kuhn attended the young lady at the time. I informed him of my intention, and explained to him how I should proceed; the doctor having advised the young lady to let me make the experiment, the operation was performed. About two or three weeks after, I filled the cavity with gold, and I never heard any more complaint from it. I might cite several other cases of the same kind, which succeeded as well; but let these suffice.

My opinion, therefore, is, that teeth cannot be transplanted from one mouth into another, so as to answer the intended effect; that is, that the transplanted tooth will not become as firm and as useful as the one which it has replaced, and last as long till destroyed by caries or accident. The reasons which I give in support of this opinion, are those already advanced, that the root of the tooth which is to replace the defective one, should be of the same *length, size and shape* of the root of the one which is to be replaced, and that the dentist is obliged to judge of that without seeing either. I therefore believe that there are a thousand chances to one, against the success of the operation of transplanting teeth from one mouth into another, if not entirely impracticable.

DIET AND THE TEETH.

Nation.	*Diet.*	*Carious Teeth.*
Arctic Regions	Animal. Chiefly much fat,	1 in 34
Greenlanders,	do do	1 in 34
Icelanders,	do do	1 in 34
N. Am. Indians, Coast,	Buffalo meat exclusively,	1 in 28
do Interior,	Meat and roots,	1 in 11
Oregon Indians,	Meat and Salmon, putrid,	1 in 11
Old Mexico,	Vegetables chiefly,	1 in 4
South American Indians, Pampas Indians,	Mare's flesh; no bread, fruit or vegetables,	1 in 4
Guachos,	Beef,	No toothache.
In towns eat stews, etc., and have much caries.		
Australia, (native,)	Meat and fish,	1 in 5
Tasmania,	Mixed,	1 in 4
New Zealand,	Vegetables, meat and fish,	1 in 33
Friendly Islands,	Vegetables chiefly, but meat and fish too,	1 in 10
Otaheite,	Mixed diet, 9-10s vegetables,	1 in 10
Figi,	Human flesh, pigs, cocoanuts,	1 in 19
Sandwich Islands,	Fish, vegetables, hogs, dogs,	1 in 7
China,	Animal and rice,	1 in 3
Japan,	Rice and mixed diet,	1 in 3
India,	Rice,	North 1 in 14 South 1 in 7
Ceylon,	Vegetables and rice,	
Nubia,	Animal,	Splendid teeth.
Abyssinia,	Raw meat,	No decay.
Tartars,	All meat,	No caries.
Ancient Britons, Dolichocephalic,	Meat entirely,	1 in 34
do do Brachycephalic,	Mixed,	1 in 5
do Canon Greenwell,	Mixed,	1 in 2
do Miscellaneous,	do	1 in 5
Romano Briton,	do	1 in 5
Anglo Saxons,	do	1 in 6
Ancient Egyptians,	do	1 in 2
West Coast Africans,	Maize,	1 in 4
East Africans,	Flesh,	1 in 4
Kaffirs,	Milk,	1 in 8
Bosjesman,	Roots, etc.,	1 in 5
Hottentots,	Raw meats chiefly,	Very little decay.

—*Journal Brit. Dent. Ass'n.*

THE DEAD NERVE—A SUGGESTION.

HELEN E. STARRETT.

It was a quivering, shivering thing
That shrank from its environing,
Within whose tiny, fibrous cell
Did such a power of suffering dwell,
Such vast capacity for pain
That it could craze the tortured brain;
Could make life seem a demon's curse,
And darken all the universe.
And now it lies there cold and dead;
The wondrous prisoner, life, has fled;
Nor cold, nor fire, nor searching steel
Has any power to make it feel.

I wonder if this heart and brain,
Whose vast capacity for pain
Can make life seem a demon's curse
And darken all the universe,
And yet can know such blissful heights
Of happiness in love's delights,
Such joy in nature's beauteous life,
Such energies for conquering strife,
Are only the ephemeral shell
That holds a prisoner in its cell?
And when the heart and brain are still,
And know no more of good or ill,
Beneath the skies lie cold and dead,
Where will that passionate life have fled?
In all the universe, oh, where
Shall be that wondrous prisoner?

—*The Weekly Magazine.*

Editor's Specials.

"Write the Vision and make it plain."

HYDROCHLORATE OF COCAINE.

But a few months more than a year have elapsed since this remarkable medicine was laid before the profession. We said something in reference to it in a preceding number, when we tried to enforce the idea that its anæsthetic action is much more prompt than has been generally supposed. Since then, the Xenia Academy of Medicine adopted it as a special subject for experiment and research till the ensuing meeting. The meetings are held semi-monthly. On comparing notes, our views, as already expressed, were fully sustained. All found the local anæsthetic effect as prompt as we had said. It is decidedly manifested on the skin in less than ten seconds, when injected into the subjacent cellular tissue.

As to the duration of the local anæsthesia produced by it, different results were obtained. Sometimes it was subsiding rapidly in six minutes, and other times it was still quite decided after a lapse of thirty minutes. Most of the members seem to think that the degree of circulation in the tissues involved had something to do with the difference.

No one tried experiments with anything stronger than the four per cent. solution; and some seemed to think that a two per cent. solution gave as satisfactory results. We have found very and decided results with the strength of one per cent.

Till within a few months, its local action claimed almost all of the attention it received; but recently its constitutional manifestations have been more closely observed. We do not know of its being used in this way except by hypodermic injection. In the disease sometimes called muscular rheumatism, and often *myalgia*, which is probably caused by inflammation of the sheaths of the muscles involved, the hypodermic use of this medicine gives relief so prompt and complete that both physician and patient are astonished. And in neuralgia resulting from congestion or inflammation of the meninges of the nerve trunks, the relief is quite as prompt and remarkable. A prominent physician, previously referred to, had suffered long and severely with sciatica. He was relieved of all pain in fifteen minutes, by the hypodermic use of ten minims of the four per cent. solution; and by taking this dose twice a day for but a few days, all signs of the trouble vanished, without as yet any signs of returning. The medicine was taken early in September, and at this writing, the middle of December, the case is regarded as cured.

Encouraged by the above success on himself, he tried a ten minim dose on (or in) a man suffering with a stiff neck. The muscles were so swollen and painful that he could not move his head in any direction. In ten minutes after the medicine had been injected he was quite relieved, and in twenty. all traces of the trouble were gone; and the relief proved as permanent as it was complete. About the beginning of December, a man of seventy-five years was suffering like the one described above. We injected four minims of the four per cent. solution into his arm, and in twenty minutes he was completely relieved, and has so remained. We have never given over six minims of the four per cent. at a dose.

Some of the members of the Academy of Medicine, above referred to, reported similar cases, with similar success. We have given it to arrest paroxysms of angina pectoris, and also in spasmodic asthma, with very satisfactory results. All in all, we believe that its constitutional effects will be found more important than its local. The Academy is still investigating it.

Patients who have taken the muriate, as far as we have been able to ascertain, testify that no depressive feelings follow its use. The nervous system appears to be toned up by its immediate action, as is the case with opium and alcohol, but there seems to be no corresponding relaxation. This accords with the experience of those who use the coca leaves, or an extract from them. The South American porters sustain their strength by chewing the leaves, yet, on the testimony of competent observers, they have no inclination to use the leaves when off duty. When suffering from prolonged nervous prostration, advised by a medical brother, we used the fluid extract of coca daily for nearly three months. Each dose was taken reluctantly, and we believe that if it were, in any sense, a stimulant we would have recognized the fact, and possibly have acquired a coca habit. Some of our exchanges speak of such a habit, and the danger, if there is any, should be duly considered. But were the danger great, the porters above referred to would likely all be victims.

More light is needed in order to know the proper place of, and the good to be obtained from this medicine. When its *modus operandi* becomes better understood, we presume it will be the most reliable medicine known in the treatment of chronic neuralgia.

DIAGNOSIS—ITS IMPORTANCE.

EARLY in our professional career we often met in council an aged physician who was very highly educated, and whose counsel, as to the treatment of disease, was highly prized, yet it is probable that, in his own practice, he often, if not generally failed to know what ailed his patients. Perhaps his powers of observation were naturally defective, but let this be as it was, when the pathological condition of your patient was pointed out to him he would give to you good, sensible advice as to treatment. Noticing this physician's misfortune, awakened us to the great importance of correct diagnosis.

Some physicians, or so called ones, however, succeed in gaining the confidence of communities, and in amassing wealth, without much information in diagnosis or in anything else. One that we knew made reputation by calling every little excrescence a cancer, and burning it out with crude potash prepared by himself, accompanying the process of preparation with some mystic flourishes, such as breathing on the material nine times while his eyes were closed. It was claimed in his behalf that this enabled him to discriminate so as to avoid sound underlying tissue, and thus "eat" only the cancer. A wart, a wen, a whitlow, or whatnot, was a cancer in his vocabulary, and, that his medicine would eat it was holy-writ proof that his diagnosis was correct.

In like manner, we see, almost daily, a quack who calls any cough consumption, increased action of the kidneys, due to cooler weather, is Bright's disease, a common itch is scrofula, and eczema is leprosy ; and, as the fool-killer has long been derelict in duty, he prospers financially.

By mistaking or mis-stating the diagnosis, a man often gets credit for mavelous, and almost miraculous cures.

Dentists don't treat such great varieties in disease as do physicians ; but they too have their difficulties and make mistakes. The disease known as *pyorrhœa alveolaris* illustrates this truth. A patient's mouth may be very offensive, his gums may be red, spongy and swollen, crusts of salivary calculus may abound, and the dentist may call the trouble by the long latin name above, scrape off the tartar, apply a lotion, suggest a tooth-brush, and report the case cured by a single application. Are not such cases common? Does the description refer to a familiar, or to an unfamiliar scene? But all named in the case above may be present, and all claimed may occur, and yet no *pyorrhœa alveolaris* has been cured, nor has it been even treated.

A genuine case of the virulent disease may present milder symptoms than are described above; yet the man who professes to cure genuine *pyorrhœa alveolaris*, in a day, and by a single application, may be a good manipulative dentist, and an honest, sincere man, but we always take for granted that he has made a mistake in diagnosis. The man who really understands the pathology of this disease, will not regard it as purely local, and he will not rely wholly on scraping, or other local measure.

In treating pyorrhœa it is quite important to remove all deleterious and unpleasant accumulations from the teeth, and even from the entire mouth. Cleanliness is akin to godliness; and it is as important here as in the treatment of typhoid fever. No sane physician would allow excrementitious matter to remain in the bed-room of the invalid in such case, but he would not claim to have cured the patient by its removal. And were the typhoid patient to regain his health within a day after a single removal, we would all know the physician had erred in diagnosis when he called it typhoid fever.

An eccentric physician claimed that he was making a good average in his practice, as he cured a goodly number who were getting well anyway, and killed some who would have died even without treatment. It may be that some of our specialty have had similar experience, even when endeavoring to do the best for their patients.

But if in writing this we succeed in calling the attention of our readers to the importance of correct diagnosis, thereby inducing some to greater carefulness and closer study, we shall be well repaid for the brief effort. In referring to the cases of extreme disregard in this direction it is not our purpose to intimate that we know of dentists deserving to be classed with such; but in setting forth extremes, we can better show the exceeding blackness that is possible when developed by the united forces of ignorance and dishonesty.

MISUNDERSTOOD.

When misreported we generally keep quiet unless we are set forth as teaching false doctrine. At the late meeting of the Ohio State Dental Society we talked entirely too much, and have been well punished accordingly. But some points in the report of *The Cincinnati Medical and Dental Journal* stab too deeply. That is more than our misdemeanor merits.

In speaking of the action of peroxide of hydrogen in pyorrhœa alveolaris, we suggested that liberated oxygen is the active principle. We referred to the fact that oxygen is soluble in water, but that such solution would not supply the place of the peroxide, simply because the oxygen here is free, and passive or quiescent. It is not necessary nor practicable to decompose water to get oxygen, for besides that in combination with hydrogen to form water, free oxygen is abundantly held in solution, not merely in "well water," but in all water exposed to the atmosphere.

The report has us saying, "When lecturing in the Ohio Dental College, he submerged a bright bar of steel in water, demonstrating that it would not rust during an entire season in an atmosphere of pure oxygen. Having passed a few electric sparks through the water, the bar was almost eaten up with rust in a single day. The oxygen was liberated as the result of the water's being decomposed, and in its *nascent* condition became instantly very active."

Now it is possible we *said* that, but nothing could be further from what we *thought*. It was *oxygen*, not *water* into which the bar of steel was placed. As the steel was not corroded there was proof that the oxygen was passive. Afterward a few sparks of electricity were passed through this quiescent oxygen, and it was made active, and rusted the iron rapidly. No water there to be decomposed. This experiment was tried at the Union Female College of Xenia, more frequently than at the college spoken of, because more convenient apparatus was at hand. We hope to get this understood before we die.

Active oxygen would burn the phosphorized matter in the blood corpuscles, besides irritating the air passages.

In this connection we might say that the experiments on the pet dogs were not necessary that we might be "fully satisfied of the anæsthetic effect of hydrochlorate of cocaine when used hypodermically," for this point had been well settled before, but the dog experiment and others, we thought, demonstrated the action to be more prompt than had generally been supposed.

We are not complaining of the way we have been reported. We are, however, sorry to be so misunderstood. Probably we speak too rapidly; and we cannot speak so distinctly as when younger. We do not like a report of our remarks to teach such glaring errors.

Please bear in mind, reader, that pure, free oxygen can be changed from its passive to an active state by electricity, by heat, by will power, and by mechanical compression. When active, it combines, if in contact with oxidizable matter. Then, if separated from such combination, it is still active, and is said to be *nascent*.

A NEW VOLUME.

A YEAR ago we were under a cloud, darkened by physical depression resulting from a serious accident. The prospect for editing the fifth volume of the JOURNAL was not flattering. Not very strong when we began, we had still been able to do all the editorial writing required. Reaching a crisis that totally prevented such labor, we felt much discouraged, but other hands were ready, and other minds were able to take in the situation, and meet the demands of the occasion. At the beginning of this volume we find ourselves better able to write than at any time previous in the history of the JOURNAL. Besides we have the promise of articles on important subjects from some of the ablest men in the profession, and we have secured the assistance of a special contributor, known and read, as well as appreciated by all our thinkers. All in all, we hope and expect that our sixth volume will be superior to any of its predecessors.

But, dear readers and former contributors, don't for a moment allow yourselves to think that we do not want and *need* your help, as in the past. Send us all you have time to write, and let each one stir up his neighbors to write for us. A free and full exchange of ideas insures intellectual and practical progress. Without your sympathy and aid we cannot fail to come short of our aims.

So while thanking you all, and especially those who helped in the crisis above referred to, we take courage and are more hopeful than ever before. Our publishers are as wide awake as ever, and if you don't get a good periodical it will not be their fault. In view of their extraordinary efforts on the Journal at such low subscription rates, it is your duty, in return, to try to extend our circulation by asking your neighbors to subscribe. You can thus bless your neighbors while helping our publishers, at a small sacrifice of your time and strength.

Such action on your part, while not giving financial help, will greatly encourage us, as it is always more pleasant to write for many than for a few.

IODIDE OF POTASSIUM.

A careful study of the nature and *modus operandi* of this salt, when used medicinally, will be found profitable to almost any of us. As its name implies, it is composed of the metal potassium and the metalloid iodine, not commingled or mixed together, but *combined*, so as to practically form a new substance. We may, and often do desire the constitutional action of iodine and potash as each would act if introduced into the general circulation.

A young patient, or even one not very young, may be brought to us with depraved and perverted secretions, with the blood loaded by foreign matter, so that the tissue forming functions of the constitution are unable to build up strong, healthy, normal tissue, partly from lack of proper material, and partly because, through depraved and perverted nutrition, they are not strong enough to properly discharge their functions, even if supplied with good material in the greatest abundance.

If these foreign matters, often, if not generally vitalized to a greater or less degree, were killed and dissolved, the emunctories could carry them out of the system. As a general rule iodine would kill them, if in contact with them, and potash can dissolve them ; and generally it is able to dissolve the compounds formed by their combination with iodine. But how is this contact to be brought about? They kill or dissolve by virtue of their chemical force, or affinity; but affinity requires imperceptible distances, or practically, contact, in order to its action.

It is well known that iodine has strong affinities for the soft tissues in general. It forms definite combinations with the protein compounds. Potassium has such a strong affinity for oxygen that it takes it from almost any of its combinations. It burns briskly in, on, or under water, by virtue of this affinity. Of course it is, therefore, impracticable to administer the metal, potassium, as a medicine. The oxygen it would find within the mouth would set it on fire. Or if mechanically protected till it could reach the stomach, the same phenomena would occur there. Its local action, therefore, would be dangerous and deadly, and would entirely prevent any constitutional remedial action.

And even when the potassium is saturated by oxidation, the compound, potassa, known as caustic potash, is dangerous in its local action, by virtue of its strong affinities for the various tissues.

But by combining these two elements, we have iodide of potassium, or potassium iodide, if the term is preferable, which is the salt under consideration; and by virtue of its composition and its characteristics, we can gain all the desired action of one or both of the elements composing it, without any of the deleterious and dangerous results that would occur from the administration of the elements themselves.

In the first place; it is a neutral salt, almost, if not entirely inert, as such, or while the elements composing it are held together by their affinity for each other. But they are thus held by a very feeble affinity, which is, therefore, readily and easily overcome.

Again it is highly soluble. And its molecules have very small diameters. Hence having all the above properties, it is readily taken into the general circulation. The union of its elements prevents their local action, long enough for them, thus combined, to gain access into the entire circulating fluid. It can thus go wherever the blood can, and even where the corpuscles can not go. Thus circulating, it meets with substances for which one, or both its components have stronger affinities than they have for each other, and they are separated. But they are not turned loose like escaping wild beasts, to cause the havoc above described as possible from their local individual action; but, being separated by affinities for other things, they are, atom by atom, taken up by at once combining with these things.

In thus acting after separation, they combine with and so destroy more or less of living healthy tissue; but as morbid action is below normal, morbid tissues have a lower degree of vitality than normal tissues, and are therefore, more amenable to chemical action, because less protected by vital force.

It is probable that in the decomposition of iodide of potassium within the blood, the first factor in the process is the affinity of potassium and oxygen for each other. By the union thus resulting, potash, the great solvent of animal tissues, is formed, which combines with and neutralizes any excess of acids which may be present, and aids in the solution of the morbid materials, so that they can be carried out of the system.

Thus we see how it is possible for a neutral salt, almost, if not entirely inert in itself, to become a most powerful remedial agent, accomplishing results unobtainable by other agents. And it is pleasant and profitable to trace its progress. its changes and the phenomena resulting from its circulation in and with the blood, and thus to understand the methods by which it removes from the system deleterious, abnormal matters, so that organs involved may be relieved and thus restored to the performance of their legitimate functions. How much more satisfactory is this than it is to rest content by calling the salt an "alterative," and to state that, like mercury, it "increases molecular action!"

It would lengthen out this paper beyond present intentions to point out all the uses of this agent. Many patients come to us with constitutions so broken down, and with the secretions so depraved that it is not worth while to try to save the teeth by local treatment alone. In many such cases a mild course with this medicine will both gratify and surprise the dentist. And as many dentists are but partially educated in therapeutics, it is often proper to ask for the co-operation of the family physician. And here comes in a difficulty sometimes, because of the ignorance or prejudices of the physician. He will not recognize that you know anything about therapeutics; and you may become equally as well convinced that he doesn't know much about the details of defective dentition. But when you are both gentlemen and act accordingly, you stand a fair chance to be mutually useful.

In cases of chronic mercurial poisoning by amalgam fillings or otherwise, probably no other therapeutic agent can be so fully trusted for the gradual removal of the poison. Many will tell you that by its prolonged administration there is danger of ptyalism, similar to that caused by mercury. We have seen this trouble follow the prolonged use of the iodide, but always in patients who had previously taken mercurials to a considerable extent. In other words, we have always regarded the ptyalism as the effect of mercury previously stored, or deposited in the system. All the symptoms, and especially the diagnostic odor, bore ample testimony in favor of mercurial ptyalism. It may be possible that a certain form of ptyalism may become manifest while using the iodide, with patients who have taken no mercury, but we have never seen a case of it; and the descriptions given by those who claim to have seen cases, indicate something quite distinct from mercurialization.

If, then, the ptyalism, in such cases is due to the liberation of stored mercury, it follows that the iodide should be used watchfully and carefully, and its administration should be intermitted according to the demand.

The nutritive functions may be overpowered and depraved, and especially in reference to bone and tooth making, so that it is impossible for good, solid, firm, and handsome teeth to be developed. In such cases the dentist—at least the dental surgeon, if a distinction exists—has a duty to discharge. The blood and the secretions generally may be, as it were, cleansed out,—quite relieved from foreign deleterious matter, by a mild course of the iodide, so that the patient is empowered to develop healthy dentures, so far as any teeth are yet to be formed and emptied. This is important to remember in the treatment of young patients.

And not only new teeth, yet to come, will be better than without it, but those already developed will improve in texture and appearance; for the teeth are liable to impoverishment, and capable of physiological repair.

Societies.

"Wherewith one may edify another."

OHIO STATE DENTAL SOCIETY.

The first annual meeting of the society as reorganized was held in the Council Chamber, City Buildings, Chillicothe, commencing Wednesday, October 28, at 10 o'clock, A. M., and continuing until Friday noon the 30th, 1885, President C. H. James in the chair. After prayer by the Rev. Charles Fisher, D.D., Rector of St. Paul's P. E. Church, the Secretary read the minutes of the incorporators.

The President, in his address, gave a short history of the State Society. The call was issued for June 26–27, 1866, and 48 became members—8 of them are on the list of incorporators of the new society—in all 227 became members of the old organization.

The hours of meeting were 9 to 12 A.M., 1:30 to 5:30 P.M., 7:30 to adjournment. Dr. Rehwinkel stated that Dr. Bödecker who was expected to give a clinic, would not be present, owing to absence in Europe.

Members of the old State Society and members of other State Societies were invited to take part in the discussion on a Constitution and By-Laws.

Col. Entrekin, Representative elect, was present by invitation and took part in the discussion on revision of the State dental laws.

SECOND DAY.

The Constitution and By-Laws adopted, as printed in the December JOURNAL.

The Treasurer reported as follows:

Balance last report, - - -	$41.14
Expenditures since last report, - -	12.58
Balance on hand, - - -	$28.64

Auditing Committee reported same correct.

The following committee on Revision of Dental Law was appointed with power to act without further reference to the society :—

C. H. James, Cincinnati, *Chairman ;* F. H. Rehwinkel, Chillicothe ; A. F. Emminger, Columbus ; J. R. Callahan, Hillsboro' ; F. C. Runyan, Springfield ; J. E. Robinson, Cleveland ; C. H. Harroun, Toledo ; H. H. Harrison, Cadiz ; H. A. Smith, Cincinnati.

The chairman of the committee stated that all members of the society, although not on the committee would be expected to work for a revision of the law just as hard as the members of the committee, and use their influence with the members of the legislature and the public.

Dr. A. O. Rawls, of Lexington, Ky., by request, read a paper on Pyorrhœa Alveolaris, which has appeared in the JOURNAL with the exception of a few changes.

Dr. A. W. Harlan, of Chicago, also read a paper on the same subject. See page 1.

[We omit the lengthy discussion, which followed the reading of these papers, because it was almost a repitition of the discussions, on this subject, published during the past year in the JOURNAL.—REP.]

Drs. Waddell, Foulk and Scott, physicians of Chillicothe, were invited to the privileges of the floor.

Dr. R. H. Rehwinkel presented a patient, showing the effects from an impacted lower right third molar.

A letter was read from Dr. J. G. Templeton, of Pittsburgh, regretting his inability to be present as a delegate from the Pennsylvania State Dental Society.

THIRD DAY.

It was ordered that five hundred copies of the Constitution and By-Laws be printed for distribution.

Dr. E. G. Betty read a paper on the Geographical Distribution of Caries, (published on page 570, December JOURNAL), which was referred to Committee on Statistics, with the necessary funds and power to carry out the suggestions of the paper—*Chairman*, E. G. Betty, Cincinnati ; N. S. Hoff, Cincinnati ; C. R. Butler, Cleveland.

The President read a paper on Nervousness—Hereditary and Acquired, by Dr. E. Parsons of Savannah, Ga. (See page 575 December Journal.) Papers were read by Prof. J. Taft on Association Work; by Dr. C. R. Butler on Impacted Third Molars; by Wm. Beer, of New Castle-on-Tyne, England, on Dental Literature—a statistical review.

We hope to present these papers to our readers at an early date.

The publication of the proceedings and papers of the meeting was given to the *Dental Register* and the Journal.

The Secretary and Treasurer were allowed $25 each and the Secretary $32.45 for expenses already incurred.

Resolutions were passed sympathizing with Dr. I. Williams of New Philadelphia, in his illness.

The following is a full list of members in the order of their signatures to the Constitution. The first eighteen names are those of the incorporators.

The table on which was signed, in 1802, the first Constitution of the State of Ohio, after its separation from the Northwestern Territory, was brought in by Dr. Rehwinkel and used by the members of the Society in affixing their signatures to the new Constitution.

1. George Watt, Xenia.
2. C. H. James, Cincinnati.
3. C. H. Harroun, Toledo.
4. *I. Williams, New Philadelphia.
5. J. Taft, Cincinnati.
6. *David Gibbon, Warren.
7. A. F. Emminger, Columbus.
8. E. G. Betty, Cincinnati.
9. H. H. Harrison, Cadiz.
10. B. R. Taber, Bowling Green.
11. W. H. Sillito, Xenia.
12. F. A. Hunter, Cincinnati.
13. H. A. Smith, Cincinnati.
14. F. H. Rehwinkel, Chillicothe.
15. G. W. Keely, Oxford.
16. A. Berry, Cincinnati.
17. J. R. Callahan, Hillsboro'.
18. C. R. Butler, Cleveland.
19. D. R. Jennings, Cleveland.
20. C. P. Dennis, Portsmouth.
21. Chas. Welch, Wilmington.
22. L. B. Welch, Wilmington.
23. M. H. Fletcher, Cincinnati.
24. J. E. Robinson, Cleveland.
25. F. W. Sage, Cincinnati.
26. J. Stephan, Cleveland.
27. A. Terry, Norwalk.
28. J. S. Basom, Athens.
29. W. H. Hague, New Vienna.
30. F. C. Runyan, Springfield.
31. Henry Barnes, Cleveland.
32. W. D. Tremper, Portsmouth.
33. N. S. Hoff, Cincinnati.
34. Will. Taft, Cincinnati.
35. J. R. Safford, Portsmouth.
36. H. R. Clark, Circleville.
37. W. F. Galbreath, Greenville.
38. John Galbreath, Chillicothe.
39. L. J. Mitchell, Delaware.
40. W. R. Lilly, Circleville.
41. G. A. Dille, Athens.
42. W. H. Todd, Columbus.
43. E. J. Lilly, Circleville.
44. Frank Bell, Cincinnati.

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* Not present.

HONORARY MEMBERS.

Geo. Watt, Xenia, O.
A. W. Harlan, Chicago, Ill.
W. D. Miller, Berlin, Germany.
A. A. Blount, Geneva, Switzerland.
N. W. Williams, Geneva, Switzerland.
A. O. Rawls, Lexington, Ky.
Wm. Van Antwerp, Mt. Sterling, Ky.
W. W. Justis, Winchester, Ky.

The following officers were elected for the ensuing year:

President, F. H. Rehwinkel, Chillicothe.
Vice President, H. H. Harrison, Cadiz.
" " N. S. Hoff, Cincinnati.
Recording Secretary, J. R. Callahan, Hillsboro'.
Treasurer, Geo. W. Keely, Oxford.
Board of Directors—3 years term: H. A. Smith, J. Taft, C. H. Harroun, A. F. Emminger.
" " —2 years term: D. R. Jennings, C. R. Butler, F. A. Hunter, W. R. Lilly.
" " —1 year term: E. G. Betty, F. C. Runyan, M. H. Fletcher, Chas. Welch.
Board of Examiners—3 years: E. G. Betty, C. R. Butler.

The Board of Examiners organized by electing J. Taft President and E. G. Betty, Cincinnati, Secretary and Treasurer. Certificates to practice in Ohio, were granted to Clayton H. Davis, Orville, N. Y.; James O. Hawkins, Wellston, Ohio; Oliver S. Rightmire, Cincinnati, O.

Adjourned to meet in Toledo, Ohio, 10 o'clock, A. M., Wednesday, October 27th, 1886.

Books and Pamphlets.

DENTAL BIBLIGGRAPH: A standard reference list of books on dentistry published throughout the world from 1836 to 1885: Arranged chronologically, and supplemented with a complete cross-reference to authors. Compiled by C. George Crowley. Philadelphia: The S. S. White Dental Mfg. Co., 180 pages, cloth, $2.00.

This is a very full and valuable list that should be in the library of every reader of the Journal. Our attention has been called to the omission of Dr G. V. Black's, The formation of Poisons by micro-organisms and Dental Caries, in its relation to the germ theory of disease. There may be other omissions and errors inseparable from a first edition. Something more substantial than the thanks of the reading members of the profession are certainly due Mr. Crowley and the publishers, for we should bear in mind that such works as this and the Index to the *Dental Cosmos* must be published without expectation of proper remuneration.

CAULK'S DENTAL ANNUAL No. 4, 1885—1886. Devoted to the collection and dissemination of Statistics relating to the Business and practice of Dentistry. L. D. CAULK, D.D.S., Camden, Delaware. Price 25 cents.

This is a most valuable number of a useful annual, containing as it does all the dental laws passed by the different states, a list of Societies, Offices, Periodicals, Patents in 1885, Colleges, Deaths, the number of dentists, dealers, etc., also original articles on Artificial Dentures, The Canadian profession, and Dental College Clinics.

THE DENTAL ECLECTIC—A bi-monthly Journal, devoted to the interests of the profession. Conducted by S. S. WILLARD, D. D. S. Knoxville, Tenn., H. L. Willard: pp. 24, fifty cents a year.

This is a very promising little journal and, although the field is rather crowded, we welcome and wish it success.

Our Aftermath.

COCAINE IN DENTAL SURGERY.—Dr. J. H. Martindale, of Minneapolis, Minn., writes that he has had very satisfactory results with cocaine in his dental practice. Before proceeding to the extraction of incisors or bicuspids or their roots, he dries the adjacent portions of the gums and rubs them with a five per cent. oleate; then he introduces a hypodermic needle at the free edge, passing it for a distance of half an inch parallel to the roots of the tooth to be extracted, and injects two or three minims of a four per cent. aqueous solution. The tooth may then be pulled with little or no pain. In chronic alveolar abscess with fistula, the carious bone may be gouged away without exciting pain by introducing the hypodermic needle as far as possible into the sinus and injecting three or four minims of a four per cent. solution. The sensitiveness of the mucous membrane investing the parts near the soft palate, causing the patient to retch during manipulations about the back teeth, may be overcome by bathing the parts with the four per cent. solution. Dr. Carl Tuttle, of Berlin Heights, O., writes upon the same subject. He thinks that failure is often due to a too sparing use of the anæsthetic. He inserts the point of the hypodermic needle one-quarter of an inch from the free margin of the gum and passes it well down to the roots between the gum, and the alveolar process. He injects in this way seven minims of the four per cent. solution on each side of the tooth to be extracted, and allows eight minutes to elapse before using the instruments. He says that he has had very satisfactory results in dental practice from cocaine employed in this way.—*Medical Record.*

First Resection of the Upper Jaw.—Achille Cleophas Flaubert was a distinguished surgeon of France who was famous without ever having written a line on medicine. He was born at Mezieras in November, 1784, and soon after maturity became the business rival of the great Depuytren, being known throughout the length and breadth of his native land as a bold and skillful surgical operator. When in Paris he *concoured* with the best medical lights of his day, such as Bouchet, Magendie, Pelleian and others, and always carried off honors. He was the first French surgeon to practice resection of the upper jaw. Flaubert died in 1846, leaving a magnificent reputation but no literary work.—Dr. T. C. Minor in *Cin. Lancet & Clinic.*

The Danger of Submucous Injections of Chloroform.—Dop and Guillot have advised the injection of five or six drops of chloroform beneath the mucous membrane of the gums for the relief of toothache. But Blocq asserts that this procedure is not free from danger, and relates a case in which it was followed by extensive and painful swelling of the face, with necrosis of the mucous membrane of the upper lip and gum, resulting in prolonged suppuration and superficial necrosis of the jaw.—*Centralblatt für Chirurgie.*

To Increase the Adhesive Properties of Plaster.—Dr. H. R. Kelly, of Galion, O., writes that a sponge, saturated with stronger ether, passed lightly over the surface of adhesive plaster, will cause it to stick firmly to the skin. No heat is necessary, and the plaster will adhere closely over its whole extent. Spirits of turpentine will act in the same way.—*Medical Record.*

Abnormal Mobility of the Tongue, with Ability to Project it into the Naso-Pharynx.—Dr. Phelps, of Corry, Pa., writes: "A man who lives about a mile from this city, who is about forty-five years of age, came to me about one year ago for the removal of a polypus from the nose. I saw him several times pass his tongue into the naso-pharynx with perfect ease. The tongue is slightly pointed, and the frænum linguæ is apparently absent for some distance under the tongue. There is nothing abnormal in the formation of his mouth. He says he has possessed this ability for twenty years."—*Medical Record.*

Somewhat Behind the Times.—It is reported that Professor Cheine has decided to discontinue the use of the carbolic spray in the wards of the Edinburgh Royal Infirmary for six months, in order to test whether it has any real merit. He will be somewhat consoled to know that the spray has long since been discarded by most of the leading hospital surgeons in the metropolis.—*London Hospital Gazette.*

Virchow on Specialties.—In his recent address at the anniversary of the Berlin Medical Society, Professor Virchow said: "Since that time (twenty-five years ago), the great host of specialties has developed in Germany, and it would be in vain, anyhow fruitless, to oppose this tendency; but I think I ought to mention it here, and hope I shall be certain of the approval of all of those present, when I say that no specialty can flourish which separates itself entirely from the common source of science; that no specialty can develop fruitfully and beneficially, if it do not ever and anon draw from the common fountain, if it do not take the other specialties into account, and if all the specialties do not mutually assist one another; thereby, a fact which is perhaps not always considered necessary for practice, receiving knowledge through that unity on which our position internally, and I can also say externally, rests. For, gentlemen, it would be the most foolish and most dangerous development, if the system of specialties should ever come to such a pitch that special schools were founded in which special branches were taught without any knowledge of other things offered us by the science of medicine.—*Medical Record.*

Speaking in Meetings.—In our conventions and other professional gatherings it is not always the foremost to speak and act who are the wisest. The brain of some is so small it will contain but few ideas, and these not of much importance—and yet it is so pressed for utterance it would burst if not allowed to relieve itself. If such persons could see themselves as others see them, they would ask some one to hoop their heads that it might not be necessary for them to make fools of themselves. But because some make themselves bores is no reason why others should allow modesty to keep them reticent when they have really valuable thoughts to impart. If we have something important to say, it is as much our duty to say it, as it is for those who have not, to be quiet. Then there are those who are reserved because they are not fluent in speech. Some of our best thinkers and operators are of this class. These persons would find it of great benefit to themselves and others to speak as occasion requires. They are generally fluent in conversation, and by patience, would soon become so in a more formal speech.—*Items of Interest.*

About the Truth of It.—Client (to Lawyer)—I am afraid the physician's testimony will convict me. Lawyer (reassuringly)—Don't be alarmed about that. I'll read up a little about poison in the stomach, and in ten minutes I'll have that doctor in a cold sweat, and make the judge and jury think he is a hired perjurer.—*New York Sun.*

A Limit to Patience.—Waitress (to Dr. Pullem, the dentist, who is greatly annoyed by her constant use of his title in addressing him): "Tomatoes, Doctor?"

Dr. Pullem: "Thanks; no."

Waitress: "Corn, Doctor?"

Doctor: "No! *Dentist!*"—*Tid-Bits.*

Fragilitas Ossium in Syphilis.—Many writers have referred to brittleness of the bones as of peculiar frequency in syphilis, but the cause of this change in their structure has not been satisfactorily explained. With a view of elucidating the subject M. Charpy has recently made a careful examination of the bones of several cadavers which presented evidences of syphilitic disease. He found that he was able, with a very slight degree of force, to snap the fibulæ, although to outward appearances their structure was unchanged. The bones were of normal thickness, and microscopical examination gave no evidence of change. Chemical analysis showed the normal relation between the organic and inorganic constituents, but of the latter there was a diminished percentage of fluoride of calcium (1.99 instead of 2.43 per cent.). Dr. Charpy regarded it, therefore, as possible that the abnormal fragility might depend upon a deficiency in the bones of fluoride of calcium.—*Deutsche Medicinal Zeitung.*

Should Air Chambers be Used in Artificial Dentures?—In thirty years' practice, in which time I have constructed over 30,000 upper sets, not one of them has an air-chamber. The great secret in making a suction-plate is to keep the air from entering at the *heel* of the plate. If the palatine arch is soft, I make four or five grooves or marks across the heel of the cast, from one condyle to the other; say one-sixteenth of an inch apart. If the palate is hard, I do not cross the ridges over it, but make them quite deep each side of it,—that is to say, about one-sixty-fourth of an inch. If the plate bears too hard on any one part, I pare off a little. In conclusion, I am happy to say that all of my patients still retain natural, healthy mouths, instead of deformed and spongy ones.—Stephen Lee in *Dental Cosmos.*

Ancient Authorities not Reliable.—He has cited case after case in proof. It must have struck the members who have listened attentively to these reports, how many of the cases date from ancient literature. Ancient literature abounds in marvels. Cases of this kind grow fewer and further apart as we approach the period of the study of pathology or morbid anatomy, and they almost cease entirely within our own quarter of a century. Kussmaul and Shultze examined all the cases they could collect with patient detail, and what do they find? Why, that not a single case bore the test of criticism.—Dr. Whitaker in *Cin. Lancet & Clinic.*

Vicarious Menstruation.—Puech, in his collection of over two hundred cases of vicarious menstruation, gathered from different authors, sums up his statistics as follows: Menstruation at roots of hair, 6 cases; by auditory canal, 6; by lachrymal ducts, 10; by nose, 18; by gums, 10; by cheeks, 3; by mouth, 4; by bronchial tubes, 24; from stomach, 32; by the breast, 25; by axilla, 10; by the umbilicus, 5; by the bladder, 8; by the bowels, 10; by the hands, 7; by the lower limbs, 13; by various regions, 8. In young girls subject to vicarious menstruation the genitals always moist with a muco-sanguinolent matter at the time of their courses.—*Cincinnati Lancet & Clinic.*

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OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

Vol. VI. FEBRUARY 1, 1886. No. 2.

Contributions.

"A word fitly spoken is like apples of gold."—Solomon.

ITERATION AND REITERATION.

BY A PHYSICIAN.

There was sound philosophy in Patrick's proposition to the jury, "If ye don't believe it I'll swear it over till ye"; for persistence of statement often carries conviction as effectually as demonstration. Hence ingenious story tellers are careful to repeat the minute details to each new comer, and by adhering to the same form of statement in successive rehearsals, they often convince their hearers that they must be describing facts as they saw them, or they could not be so minute, or show such adherence to uniformity of statement.

And if several members of a society or association join in an assertion, and all adhere to it, with the same minuteness of statement, the effect is all the more influential. The indifferent are convinced, the doubtful are converted, and the opponents are talked down, even when neither evidence nor demonstration has been offered.

The use of calcium phosphate and similar materials, as nutritive or medicinal agents, is a matter about which the dental profession has been somewhat divided. And all possible changes are sung in discussing it. The chimes ring out organic, inorganic, mineral, earthy, vegetable, animal, endosmose, exosmose, etc., till the hearer, or reader, becomes proud that he belongs to such a *wordy*, and he thinks, therefore, *worthy* profession.

At the last annual meeting of the American Dental Association, a paper was read on "*The Earthy Phosphates*," by the worthy and esteemed present president of the Association. This paper and the discussions in reference to it by members present, illustrate the principle above referred to. It may be that the author of the paper, and those holding to its leading sentiments, have experiment and demonstration back of all their assertions, to establish their truthfulness, but a reader of the official report is likely to wish they stood out more prominently.

By a happy thought the author of the paper wipes out of the account the experiments, observations and researches of those who oppose him. And certainly this is very convenient; for to assume that they are not competent experimenters, or too much prejudiced to correctly and truthfully report results, renders it quite unnecessary to disprove their positions, or to refute their arguments. The wiping out paragraph is as follows: "Corroborative evidence, when looked for with biased judgment, was not lacking, and dentists had many tales to relate of the most stupendous changes effected in the dental development of children through a judicious administration of the lacto-phosphate of lime to the mothers during pregnancy. The instances in which such results seemed apparent were cited, while those in which no effect resulted were not included in the category, or were attributed to a want of faithfulness in taking the prescription. We believe that which we desire to believe, and there is no difficulty in finding apparent confirmatory evidence to sustain the most absurd of postulates when one sets out with a determination to do so."

Of course those anxious to overthrow a theory they oppose have no "biased judgments;" and of course they would include "in the category," and as faithfully report the cases against them as those favoring their pet theories. This is as convenient as the church of England man's definition of orthodoxy and heterodoxy, in answer to his little boy's question. "You know these heretical dissenters," said he. "Well, their doxy is heterodoxy; but our doxy is the real, genuine justifying and sanctifying orthodoxy."

Some of the assumptions of the paper, unless, as suggested above, there are unreported experiments to back up the statements, might be named with profit, perhaps. Allow a premise to show the manner of thought indulged in by the author of the paper, while making up his mind on the matter. He tells us that "In one notable case, that of a lady pregnant with her fifth child, I persuaded her to a thorough course of my then favorite remedy." (Earthy phosphates.) "All the other children had excellent teeth, their dentition being much above the average. There was no special reason why she should be subjected to prophylactic treatment, except that I fancied I saw disastrous effects impending to her own teeth, from what I presume to be an abnormally soft condition, and because I was at that time pushing this investigation with strong hopes that I had hit upon a means by which a perfect dentition might be assured to every child."

A wise proverb says, "Blessed are those who expect nothing; for it doesn't set hard on them to be disappointed." But such beatitude was not provided for himself by this writer's program. He was expecting too much,—so much, indeed, that he undertook to cure the well, to heal the healthy, to perfect perfection, to make the best possible still better, to bleach snow, to paint the sunbeam, to improve the rainbow's curve and brighten its colors. Just think of doctoring such a person as he has described above! How would we estimate the mental equipose of a physician who would fancy he had hit upon a means by which a perfect constitution "might be assured to every child"? And this to be accomplished by prescribing for and treating wellness?

As to the theory of feeding phosphates to pregnant women, we are told, "the facts are against it." And in proof that the theory is not founded on a reasonable basis, we learn that ordinary food is rich in phosphorus, and that phosphates are found in the excrements of pregnant women.

But is not every tissue of the body taken down and rebuilt with new materials? An affirmative answer to this is not far from the truth. The argument would prove too much were we to extend its application. We would not give fresh air to the suffocating or asthmatic person, because oxygen is found in his expirations, thereby proving that he is already breathing more oxygen than he needs. If we give no food till the patient's excrements fail to show any signs of the presence of nutritious materials, we will invariably starve him to death. And if a pregnant woman is so treated two human lives will be destroyed.

Persons differ much in their powers of assimilation. One constitution can readily appropriate the carbohydrogens, but partially fails in the phosphates. The tendency will be toward the development of the sanguine, rather than to the nervous temperament. Another constitution may have assimilative powers just the reverse, and the results are likely to be reversed. Other illustrations, in the same line, might be given, but let this suffice.

Now bear in mind that the laws of chemical affinity are never violated, in the building up, or the taking down of structures, whether in the organic or inorganic divisions of material substances. That the two kingdoms are closely allied is demonstrated by even the frost crystals on our windows, especially if allowed to remain from day to day till matured. They will be seen to represent every variety of vegetable life known to botanists. And the petals of flowers, if properly magnified, show the work of magneto-electricity in the arrangement and positions of the primary crystals, for crystals they are.

Let it be remembered that "quantity of matter" is one the circumstances modifying affinity. This is demonstrated in two ways. Compare water and peroxide of hydrogen. In the first the hydrogen is able to hold the oxygen with tenacity, while in the other, with the quantity doubled, half the oxygen is readily separated. Give an acid two metals which act on it with nearly equal force, the action of one may be greatly increased by a corresponding increase of its surface exposed to the acid, even though the other metal be abundant.

The above is not strange, but accords with the phenomena of mechanical force. Only last week I saw two boys putting husked corn into a wagon. One boy was much stronger than his comrade; but the weaker filled his basket as often as did the other. And this was because the corn at the stronger boy's side was scattered while the weaker boy filled his basket from compact piles. Quantity of matter to a given space was the modifying circumstance that equalized the efforts.

Now, while it is true, perhaps, that ordinary foods have as much phosphorus, and phosphatic salts as any constitution needs, provided it can appropriate all of these, bear in mind that they may be so much diluted by commingling with other materials and that often, before the system can use them, strong affinities have to be overcome, and it will be realized that it might be made easier for the system, or vital powers, to get hold of the phosphates, by judicious selection of food or medicines. And this is the matter aimed at by those whose views are opposed by the paper, and those who advocate its sentiments. Give a healthy man a diet of boiled ham, and in digesting it he will get a portion of the bone phosphate it contains; but he will never get it all. A part will escape with the excrements, in spite of his assimilative powers.

Make a change to a diet of lean beef, and support his strength therewith, and it will be found that he assimilates a greater quantity of bone phosphate. This is not strange. It is more abundant in the beef, and therefore more readily obtained in the desired quantities; and possibly it is held in the beef by weaker affinities than those holding it in the ham.

It is probable that no one has nutritive functions, or powers of assimilation sufficiently strong and active to take all the phosphates out of either,—probably not all out of any variety of food containing them. That the nutritive principles of the food are not all taken and assimilated is proved by the fact that a coarser scale of warm blooded animals, as the swine, seek, and enjoy as food, and gain nutrition from the excrements of man and some other animals.

In feeding the human race and the domestic animals, must we reduce the quantity and the proportion of food till no phosphates are found in their excrements? The boarding house adopting such fare would not be popular, nor would a corresponding stock farm become famous for its sales of fine animals. Yet if phosphate of lime, or lime in any form, is found in the voidings, we must accept it as a proof that the animals are already receiving too much lime in their food, or we must condemn the position taken by an able and popular professor, in the discussion of the paper under consideration, in which he says, "You may examine persons whose teeth are very inferior, and you will find the teeth incrusted with large quantities of phosphate of lime, showing that Nature has more than she has any use for, and has thus thrown it off. The trouble is want of assimilation."

The question is suggested here whether or not the carbonate and sub-phosphate of lime are constituents of normal saliva. I believe the best thinkers so regard them. At any rate they are generally present, and if present they are held in solution, if so held, solely by the aid of free carbonic acid. When this is taken from the buccal fluids by ammonia, or any other alkali, the lime salts are precipitated, and incrustations on the teeth are thus formed. And if such deposits or incrustations are proof that Nature has more lime than she has any use for, and has thus thrown it off, the presence of these salts in the saliva, though in complete and total solution, is as equally conclusive proof of the same thing.

But if variety of expression used in asserting a position is of value, this paper under consideration and its adherents may regard their point as carried. Under the head of physiological reasons we are told that the administration of the lime salts is "mistaken treatment;" "it is based upon erroneous assimilative views;" that the earth is "the primal source of all nutritive material. But there is no order or class in the animal kingdom that can elaborate it;" "no animal organism can derive nourishment from earthy matter. That function rests solely in the vegetable kingdom. Animals are not primal organizers. They cannot digest the inorganic. They require organized structures for their food. The study of vegetable physiology shows that these alone have the ability to assimilate inorganic matter." There is more of the same sort, in this paragraph, and a little further on we are told that neither man nor the Graminivora can make nutritive use of inorganic matter." "It follows, then, that if inorganic matter be introduced into an animal organism it is entirely foreign, and must be eliminated in an unchanged condition." "All inorganic matter. then is foreign to the animal system, and, so far as nutrition goes it is not only entirely useless, but absolutely mischievous."

But just here, remembering that a few little stones in a chicken's gizzard are not very "mischievous," they must be quarried out of the account, or the theory will topple; and the lever that displaces them is the unsupported statement that, "The small stones in the gizzard of the fowl are foreign bodies, which play no part in assimilation."

The grains of corn in the gizzard of the fowl are also "foreign bodies," yet it does not follow that they "play no part in assimilation."

But if the hens do not get these pebbles and grains of sand their feathers are not well developed, nor do they produce eggs in desired quantities and normal conditions. To make the materials within the shell they must have silica, as they must have lime to make the shells. And it is probable that every successful poultry raiser recognizes these facts and acts accordingly. Though the fowls may and do get lime and silica from vegetable and animal food, yet nothing in the paper, or the remarks endorsing it, proves that the sand and gravel eaten by the birds do not aid in the development of the body. They are as thoroughly digested as are the organic foods, and for aught that appears, are as ready for assimilation. And we find such authors as Lehmann holding this view. Lehmann says, "That the quantity of silica occurring in the animal organism essentially depends on the greater or less quantity of silica in the food, and consequently, that the origin of this body must be principally referred to vegetable food and *siliceous water* (and further, perhaps in the case of birds, *to the sand which they swallow*), is rendered sufficiently evident from the experiments of Gorup-Besanez, if, indeed, any demonstration of the fact were required." The italics are mine; but let it be noticed that this author recognizes the appropriation from both kingdoms, on the principle that silica is silica.

The same author holds similar views as to the assimilation of lime, as he says, "The liberated phosphoric acid must combine with the lime which enters the animal body with the vegetable food or with *the water used as drink*." The italics are mine, again, but notice that he is discussing the assimilation of lime and its conversion into bone phosphate, when he recognizes that it may be thus taken from its ordinary solution in well water.

Shall we take Lehmann as authority; or take this unsupported statement from the paper? The statement is as follows: "The system will not take carbonate of lime, but it will elaborate the material from the calcium, carbon, and oxygen that it derives from the food, and it will take its carbonate of lime in no other way."

Let us look at the facts in the light of common sense. Perhaps a majority of our people drink "hard water." By virtue of free carbonic acid dissolved in it, it holds carbonate of lime in solution. After being taken into the stomach it passes into the circulation, just as a solution of iodide of potassium does. Now suppose in its way it meets with phosphoric acid set free by the action of some other acid on the phosphate of lime, what is to prevent the combination of this phosphoric acid with the lime, thus liberating the carbonic acid? How will the acid and the alkaline earth know, in the dark, that they must not unite, and thus violate the doctrine of this paper? Or, in other words, what is the difference between this carbonate of lime and that elaborated in the system by oxidation of carbon and calcium, and the combination of the two resulting oxides? And if the system can so readily make its compounds from the simples, why is it not able to use compounds readily decomposed and thus form other compounds? This is worthy of thought in view of the fact that, for the purpose of increasing the red blood corpuscles, we may administer iron in substance, or as a sulphate, citrate, or nitrate of the protoxide, a chloride or a sesquioxide, with the same general result, while the iron in the blood is always in the form of the sesquioxide and the carbonate of the protoxide; and without the iron in these forms it can not discharge its functions as a vital fluid.

And just now it may be proper to say that iron is properly conceded to belong to the inorganic kingdom; and if the two compounds of it above named are essential constituents of blood; and if the blood is organized, or is alive, it is hard to believe that the system cannot appropriate at least one thing from the inorganic kingdom.

But after all, is there not a shadow of confusion, if not in the paper, in some of the discussions following, as to what is inorganic and what is not? I am hardly ready to assert with one of the speakers discussing the paper that this classification, (or rather the want of it), is "The doubled and twisted first lieutenant of his Satanic Majesty," for I do not believe there is any majesty pertaining to Satan, but that he is a chained slave; but it may be illustrated by the fact that in general the lime phosphates were referred to as inorganic. The phosphate of lime used in medicine and in the arts is obtained by calcining bones.

But bones are organic most certainly. Hence is not phosphate obtained from the organic kingdom? Some years ago, when Dr. Watt referred to feeding marble dust to his hens, when they were dropping eggs without shells, or with very thin ones, and reported perfect shells as speedily resulting, a dentist in California set up the claim that as marble is made up of prehistoric shells, it is therefore organic. How much stronger is the claim of the calcium phosphate to such classification?

In some of the discussions following the paper the use of chloride of sodium seemed somewhat difficult to reconcile with the theory advanced. Because it is found in the excretions some seemed to regard it possibly as a foreign substance. Its passing through unchanged was the stumbling block. But I presume a careful study of the views set forth in *Lehmann's Physiological Chemistry* might help us all. In one place he says, "We have also found that the quantity of salt in the excretions, and more especially in the urine, corresponds very closely with the quantity in the food, whilst direct experiments have shown that this salt, when it is injected into the blood, is rapidly excreted through the salivary glands, the mucous membranes and the kidneys. We think that these well establish facts give great probability to the idea that this substance is necessary for the animal vital process."

Instead of this, others have held that its passage by excretion is proof that it should not be used at all. It has been recognized that when the system has been deprived of nutrition for a time, as by disease, the salt taken from without is all retained till the blood, the secretions, etc. have regained their normal quantity. This seems to hint at appropriation at least, if not at assimilation.

An argument near the close of the paper seems hardly conclusive. The reader will excuse a long quotation for sake of fairness. It is as follows: "The simple substances of which the body is composed are comparatively few, and are found everywhere. Were it otherwise,—were it the case that the organism is unable to elaborate its compounds from the elementary substances; were it the fact that carbonate of lime and fluoride of calcium and all the compounds must be supplied as they exist it can readily be seen that animals could not subsist upon a simple diet. It would be necessary to supply such foods as contain the exact compounds needed, and this, except under the most favorable conditions would be impossible. Hence but a very small proportion of the earth's surface would be habitable, and most orders of animals would become extinct through inability to obtain the exact compound needed for so complex a nutrition."

But can not the organism dispose of compounds also? Or is it true that all nutritious matter is elementary? As an illustration let us reconsider the action of the organism on iron, as already noticed. We can very readily understand how it can change the metallic iron into the carbonate and the sesquioxide, the forms in which it is held in the system. But suppose the sulphate of the protoxide is administered, can the system not manage it? Let a stronger base, as lime, potassa, or soda, come in contact with it, at least a part of the sulphuric acid must let go the protoxide of iron; and then carbonic acid may be present and take the iron oxide, or oxygen may take and convert it into a sesquioxide. And possibly, if not probably, this is accomplished more readily, and with less waste of force than are the changes of the simple element iron into the same desired compounds.

And the same positions hold good in reference to the salts of lime. We would hardly risk the administration of the simple metallic calcium, as it would be but little safer than to administer potassium or sodium. But lime in any form in the system can be changed readily into the desired carbonate and subphosphate.

In beginning this paper it was not the intention to follow out the lines of thought presented as far as has been done. It was intended, too, to notice the leading items in the report of discussions following the paper. But time and space do not permit all this.

In giving specimens of the statements and reiterations asserting the leading doctrine of the paper it was not intended to give other than typical expressions. Nor has more been done. Very many assertions have been totally omitted. As said at the beginning, it is quite possible that both the author of the paper and those reiterating its leading assertions while discussing the subject, have experiments and demonstrations to fall back on. But it might have been more satisfactory had some of them been presented.

But it is no part of this effort to criticise other than for the sake of science and truth. But, to be in the fashion, let the present writer *assert* that he has never found any kind of remedial measures give better and more uniform results than the bone phosphate treatment in gestation and lactation, when treatment was called for; but he would not derange the system with it, without such call.

THE SENSE OF TASTE.

BY E. J. LILLY, M.D., D.D.S., CIRCLEVILLE, O.

All knowledge of external nature is primarily derived through the medium of the senses; but the length of time required for some of the senses to convey intelligence to us is far greater than that needed by others, taste perceptions being relatively slow. Yet the majority of persons eat as though they had no other thought than that of satisfying the wants of the system, and consequently derive very little pleasure from the process. As a witty writer says: "The average American in the average American restaurant, eats his dinner in the average time of six minutes and forty-five seconds. He bolts in at the door, bolts his dinner, and then bolts out, as if he knew he had swallowed poison, and must find a doctor and a stomach-pump, or die."

Compared with other modes of motion, that which gives rise to sensation is very slow, the impulse traveling along the nerves at the rate of only one hundred and fifty feet per second. As an illustration of this fact let us imagine an infant with a tongue long enough to reach to the moon. Then if the man, who popular tradition says lives there, were to moisten the tip of its tongue with some "cold peas-porridge," or give it a taste of the "green cheese" that is so abundant on that planet, it would be three months older before the particular flavor of the porridge, or the pungent flavor of the parasitical cheese were discerned. On the other hand light, traveling with a velocity of one hundred and eighty-six thousand miles per second, jumps from the earth to the moon and back again in two and a half seconds.

Physiological analysis has clearly brought out the fact that most of the tastes we perceive proceed from the combination of olfactory sensations with a small number of gustatory sensations. In reality there are but four primitive and radical tastes—sweet, sour, salt, and bitter. A very simple experiment will serve to prove this fact. If, to neutralize the sense of smell, we keep the nostrils closed when tasting a certain number of sapid substances, the taste perceived, if any, is invariably reduced to one of the four just mentioned.

Tastes differ. Even the old proverb "de gustibus" can hardly prevent astonishment at the diversity of tastes. What would Pythagoras have said to our national dish of pork and beans! or what shall we say to explain the Japanese prejudice against milk, the Papuan's partiality for large white caterpillers, or the Chinese love for bird's nests and rats? The Turk's shudder at seeing a Frank swallow oysters; and even in this land of oyster-beds we find individuals with similar dislikes. And still, if some wide-spread cause necessitated a change in a nation's diet, it would very readily be brought about, for tastes are quite easily acquired, this sense being as susceptible of cultivation as any other. Some articles of food are positively repugnant to the palate when first tasted, but many afterwards become real delicacies; others again are spontaneously agreeable, and may so delight the palate that all other pleasures and pains are for the time unnoticed. This was the case with the Chinaman who, as Charles Lamb tells us in one of his delightful essays, first had the pleasure of tasting roast pork.

Since that time this delicious dish has been both praised and condemned without limit. Moses prohibited the eating of pork and rabbit flesh, and many of his followers preferred death to the obnoxious diet; but our Saxon forefathers exalted the pigs-feet of Valhalla as the supreme reward of heroic virtue, and, dying, the Beresark could grin through his tortures at the thought of celestial spare-ribs. But roast pork, delicious as it undoubtedly is, would in time become insipid to the palate. The man that lives upon one kind of food only, must deteriorate; the student who gives all his thoughts to one idea will become crotchety; while the devotee to a single phase of religious belief will in time become a bigot, which is but another name for monomaniac. Sameness in anything becomes unendurable, and in nothing is this truer than in regard to the food we consume.

No one thing probably has more direct influence over our physical and moral well-being than the preparation of the food we eat; and the degree of benefit we derive from it depends upon the skill displayed in the preparation. Apropos of cooking, a story that is going the rounds of the papers reads thus: The angel of death once visited a down-east household, and the patient wife went away with him. Her spirit mounted through the ether until it came to the golden portals of Paradise. The pearly gates swung open, and St. Peter appeared, holding his keys of office:

"Well, my good woman, what have you done that you should be admitted to the company of the blest?"

"Gracious, sir! I—I—I— well, I know I was a poor, weak woman when I lived, and I did not do much!" was the hesitating reply.

"Tell me but one deed; one act of goodness performed, and heaven opens for you! Speak but one deed!"

"Well, my husband and the other men folks said my cooking was good."

"What? Good cooking!" demanded the surprised Apostle, as he dropped his keys. "Madam, walk right in! Pick out the finest diamond crown in the lot; take the best golden harp you can find, and go up to the front seat! You can have anything you want! Why, you have saved more souls from destruction than a box of tracts! Pass in!"

And the gates of pearl closed, with the Apostle in the act of making a low obeisance to the new comer.

And so say we. Of all good women who should be praised, a good cook is the most deserving, since she does so much to make life worth living.

"We may live without poetry, music and art;
We may live without conscience; and live without heart;
We may live without friends; we may live without books;
But civilized man cannot live without cooks.

He may live without books,—what is knowledge but grieving?
He may live without hope,—what is hope but deceiving?
He may live without love,—what is passion but pining?
But where is the man that can live without dining?"

Thus saith the poet and forthwith turns the world over into the hands of the cook. And into what better hands could it fall? The cook wields a scepter that is second only to that of love; and even love has been soured through the instrumentality of good looking or bad cooking cooks. But the bad cooking is, in probably the majority of cases, due, not so much to a want of willingness, as to the lack of a proper knowledge of the scientific principles involved.

Science in the kitchen has long been a want generally felt and acknowledged; but to bring anything like exact measurements and correct formulæ into general use, will be a work of time, and can best be accomplished by such a system of education as is taught in some of the public schools. The difficulty, especially in America, in linking cooking-schools on to the common schools is, that the practice of cookery is not regarded as education. This is but a revival of the old notion that nothing practical or manipulatory ls properly education. There was once the same objection to considering practice in the chemical laboratory as truly educational work. That prejudice has been gotten over now, and practical chemistry is taught in nearly every school of any size. Now what is the kitchen but a chemical and physical laboratory, where intelligence ought to be developed in connection with practical processes? Culinary changes go according to law as well as transformations of matter any where else, and they just as much require cultivated thought to guide them.

No nation can be truly great without good cooks. And as America is destined to be the "greatest nation on earth," it follows that her cooking must surely improve. We are now called a race of dyspeptics. But when accurate weights, measures and temperatures shall be in use; when the physical, mental and moral value of foods are understood; when electricity shall have been thoroughly trained to assist the house-wife in her culinary operations, so that, speaking figuratively, a steak may be broiled by lightning, and the coffee warmed by the aurora borealis; when the *sense of taste* shall have been developed to such a degree that the unscientific cook will have no chance in the struggle for existence—then, and not till then will Americans reach the highest point of perfection in this regard, and become alive to the truth that there really is a "science of cookery."

"TEXTILE FOIL."

BY DR. E. J. WAYE, SANDUSKY, O.

The above is the title of a paper which appeared some time since in one of our dental journals, in commendation of a material which is in no sense a foil, as defined by Webster, Harris and others, and which by the inventor is denominated "A fibrous and textile metallic filling for teeth."

As however it is neither the nomenclature, nor the material (in itself considered), to which we take exception, but rather the extravagant, not to say preposterous claims, set up for it by the inventor, and echoed by those credulous enthusiasts over new things, whose commendations being surely based either upon careful experiment, or extended observation, whose zeal not unfrequently "outruns knowledge." and whose undiscriminating praise of new methods, materials, or appliances, grounded too often, upon mere friendship, interest, or indeed any other motive or influence whatsoever, other than thorough and painstaking investigation, and expressed with a positiveness which would seem to give an assurance of certainty, seems to mislead the unsophisticated, whose failures to obtain promised results, beginning in disappointment, and very apt to end in "plentiful lack" of confidence in the unsubstantiated assertions which in the past had led on to ignominous failure.

But we have digressed from our theme and will now return to "our muttongs."

Manufacturers and dealers in dental materials are proverbially modest men. In this respect the manufacturers of the "fibrous metallic filling" are certainly not an exception. They would seem to have adopted as their motto, the charge of a certain Ohio wire-puller and politician to his henchmen, "claim with confidence." And if claims, many of them unsupported by satisfactory demonstration, though backed by numerous testimonials, will win, this company need indulge in no misgivings.

From an advertisement which appeared in the various dental journals we quote:—

"This is a new production; easily adapted to the walls of the teeth, and a *sure preventive* for inflammation of the mucous surfaces of the mouth." (Italics our own.)

This is certainly a new role. That it may not induce it if worn next these surfaces may be true, but will it prevent it?

"The material is so soft that it is more easily introduced into difficult places between the teeth than *any other metallic filling.*" (Italics theirs.) Is amalgam a metallic filling? And how does it compare with this material in ease of introduction?

"It is more certain of successful results in the hands of persons who cannot make first class operations in gold."

Does it follow that because a person has not the skill to make a successful operation with gold that his ability will rise to the point of success with the fibrous filling?

"It does not soil or change color in the mouth." What is meant by the word "soil," as used here, we confess we do not know. But we refer respectfully to all who have used it, and ask if it does not discolor on its exposed surface, about the same as tin-foil.

"The welding properties are greater than any preparation except sponge gold."

"Gold welds to it, as readily as gold welds to itself."

If the obliging gentlemen who so heartily and unhesitateingly indorse these statements, feel justified by careful experiment in doing so, we can only say that their experience with this material differs greatly from our own.

Much stress is laid by the advocates of this fibrous felt. upon its cohesiveness. Our own experiments leading us to the opinion that this quality had been greatly overstated, and that in this respect it in no degree exceeds that of tin foil, and to be assured that prejudice had no share in arriving at conclusions in the matter, men were called in who had used, and were friendly to the material, and who joining in experiments with it and tin foil, soon became convinced not only that its welding properties are not only not "greater than any preparation except sponge gold," but that in this respect it does not exceed tin foil.

Now what are really the facts in regard to the fibrous filling? Both its composition and method of preparation, are presumably secrets. It is understood however, to be mostly tin, with perhaps a trace of platina, though of what particular use that addition may be, is not very clear, since it certainly does not prevent its discoloration, and it owes its softness to its fibres being interlaced in a loose way, by which it is rendered quite compressible, but not more cohesive. It is this softness which it is claimed so admirably fits it as a material to be placed in contact, with frail walls, and by the use of which, persons who cannot produce "successful results" with gold may be more certain to accomplish them.

Let whoever would be convinced that this idea is a fallacy, prepare a crown-proximal cavity, adjust the matrix, and fill up say two-thirds the way, as if for a gold cap, (it is for this kind of cavity that its virtues are particularly extolled,) when full enough and satisfactorily condensed, remove the matrix, select a curved plugger and carry the point around between the teeth, so as to produce pressure between the edge of the tooth and the filling, at both the lingual and buccal walls of the cavity, just where the filling and the edge of the tooth should be in close contact and the filling so firm and solid as to resist the pressure. Our prediction is that nine times out of ten the plugger will be found to enter readily, thereby proving that at perhaps its most vulnerable point, the filling is a failure, and that (as we shall endeavor to show) not altogether because of unskillful manipulation, but largely for the reason that the material itself can not without more than ordinary skill, and nicety on the part of the operator, be made to enter the angle made by the matrix on one side, and the wall of the cavity on the other. Should the filling at the edges of the two walls be found solid, in close contact with them and sufficiently full and homogeneous to admit of a fine polish, and a rounded surface, the experimenter will then have the satisfaction of having accomplished with fibrous felt, what might have been done equally as well, by the use of tin foil, with more certainty and less labor, and also in less time.

He may besides, in our judgment, feel assured that he is not properly included in that class who "cannot make a first class operation in gold." There are certain qualities peculiar to both fibrous felt, and sponge gold, which would seem to require similar manipulation, and the same skill and nicety which will succeed with the gold, must not be disregarded when using the other.

Whoever would make a perfect filling with sponge gold, will do so only by introducing it in small quantities, and condensing carefully each piece, *over its entire surface.* Should any part of it however small, be omitted, it will remain in its normal condition, and when the next bit is added the plugger will pass through it and into the piece beneath, leaving a pit; or the lower piece will remain unconsolidated, a soft, spongy receptacle for fermenting food and vitiated secretions. Were this to occur in the middle of the filling, no harm would result, if the gold on all sides of it were firm and solid. It is not here that we should expect to find this condition, but rather next the walls of the cavity, at the angle made by the cervical and side walls, and at the edge which comes in contact with the matrix, or indeed at any other points not easy of access, and which by any means fail to be reached by the plugger. If these unconsolidated portions extend along the wall to the edge, and the joint at that place should be imperfect, decay follows quickly, and is the more to be feared as it is hidden from sight. As has been remarked there are certain peculiar qualities in sponge gold which demand more care, greater nicety, and consequently more time, to secure the best results, than does either gold or tin foil. That it may be done, witness the operations of Dr. Hodson of New York City, and many others perhaps equally successful. But in the hands of the ordinary operator, the fact that with all the praise which has been bestowed upon its working qualities, its softness, cohesiveness and all the rest, it is not used by one in a hundred, should, it would seem, be accepted as an evidence that in it exists some serious defect which only the most skilled can overcome. And this is no more true of sponge gold than it is of fibrous metallic filling. This defect (or one of them) is one that makes it one of the worst possible material to place at the bottom of a cavity, and next the walls. It is the extreme care required to make a perfect adaptation, which shall be at the same time solid and impervious to moisture.

Bits torn from a larger mass of sponge gold as it is usually done, will be found almost invariably thicker in the middle than at the edge. When placed in the cavity and condensed, the middle will be solid, and the extreme edge next the walls perhaps unconsolidated, the next piece will add to this most likely, because it will all have the appearance of solidity, and it is not every operator who will exercise the care, and spend the time, to reach and condense at every point, and the result will be that the middle will be solid, while that part next the walls, while appearing equally so, will remain as it was introduced, fibrous and soft. Now unless a thin instrument be used, and the gold firmly impacted against the three walls of the cavity (by no means slighting the fourth which is formed by the matrix), and unless room enough between the matrix and the edge of the wall be obtained to enable the operator to carry the gold over these edges, and thoroughly condense it, the filling will leak. To do this requires nicer manipulation and greater skill than would be requisite with gold or tin foil. The surface of sponge gold being peculiarly deceptive and the condition beneath it only ascertainable by the pressure of an instrument.

A single extract more, with a few comments and we close. "It is a saving of more than half the expense and time."

It is peculiarly gratifying, because perhaps so rare, to have a dental manufacturer or dealer, exhibit any interest whatever in saving a dentist from expense. We had been led to believe that this class of people, either totally ignored our desires in this matter, or believed that we rather enjoyed extortion, monopolies, and all that. Their sincerity cannot however be doubted when it is once understood that the fibrous metallic filling costs only three or four times as much as the best quality of tin foil.

Whenever it is clearly demonstrated that to use it successfully requires only the same proportion of skill and time as does tin foil, then disinterestedness will become more apparent. To make it the more convincing, something beyond mere assertion should be the means employed, and we shall await with some degree of solicitude, for a satisfactory demonstration of the truth of the assertions which have (hitherto without contradiction) been promulgated.

PRESIDENT'S ADDRESS.

BY C. H. JAMES, D.D.S., CINCINNATI.

[Delivered before the Ohio State Dental Society, Chillicothe, O., October 29, 1885.]

Fellow Members of the Ohio State Dental Society:

I AM strongly impressed with the idea that my first duty on this occasion, is to express my sincere thanks to you for the honor you have conferred on me, by placing me in the office of president of this society; an honor, which I assure you, is highly appreciated, and which I sincerely hope I shall never forfeit.

It will be my object and desire to so conduct the business pertaining to this office as to leave no regret on your part that you placed me here, and with the satisfaction on my part, of yielding to my successor, having received the verdict: "Well done, good and faithful servant."

Owing to the peculiar circumstances surrounding this meeting, I deem it advisable to deviate from the usual custom, and instead of, at my retirement, calling your attention for a brief period to some professional topic, at this time, to ask your indulgence for a little while, to the matter in hand, viz: a thorough reorganization of this society; and, in so doing, pardon me if I attempt to refresh your memories with a little history.

May 21st, 1866, was issued the following appeal to the members of our profession, in this State:

"The entire Dental Profession of the State of Ohio, are hereby cordially invited to meet in mass convention in the City of Columbus, at Nauton's Hall, on Tuesday and Wednesday, the 26th and 27th of June, to form a State Dental Society, and to devise and adopt such other measures as tend to elevate and advance the interests of the Profession. Come up, brethren and let us have such a meeting as our Profession has not yet seen. The advantages to be derived from such an organization cannot be over-estimated. Other States around us are fully organized. Shall Ohio lag behind?"

This appeal was enthusiastically responded to, and on the 26th of June, an organization was effected, and the society formed with a roll of forty-eight members, eight of whose names appear on the roll of this reorganized society. The next year, 1867, two meetings were held, one in June and one in December, after that come annual sessions with unabating interest, and increasing membership until 222 names appeared on our roll. We should congratulate ourselves that much good was accomplished by the old association, and its dissolution was only made necessary by a too close application to legitimate business, and an entire oversight of the fact that in the mutations of time we did not keep in view the necessity for changes in our Constitution and By-Laws, by which disturbing elements could be excluded, and questions having a tendency to detract from the main objects, could be avoided.

It is hoped our committee on Constitution and By-Laws will not burden us with an excess of laws, but submit a report at once, simple and brief, but at the same time, comprehensive, and capable of meeting every emergency.

It would seem like carrying coals to Newcastle, to argue at this late day, in favor of associated effort, both for the good of the profession and its individual members; but there are so many who take no interest outside of themselves or their offices, leaving the profession to the care of a few; that something should be done to awaken the proper interest, and a few must for a time, at least, in the future as in the past, bear the burden.

Let one object of our association be to lessen the labors of these few faithful servants, by dividing the burden with the many, and make them all willing workers instead of indifferent approvers.

I cannot resist the temptation at this time, of making a few remarks upon the advantages such an association as this bids fair to be, has upon the individual.

He who scorns association, necessarily places himself beyond the reach of progress, and content with his superficial knowledge, moves in a rut, or is guided as the train upon a fixed tract that does not allow a movement either to the right or left, and when traveled much reveals naught but old and familiar scenes, which add no new beauties, and awaken no new desires or ambitions; monotony dulls energy, and results in an indifferent discharge of duty, to no credit and but little profit.

He who contents himself with seclusion, ignoring companionship with the members of his profession, necessity becomes disgusted with himself, his neighbors, and his calling. He never feels that intense satisfaction of having gloried in the utterance of a new idea or method, and never rejoices in a union of hearts, hands, thoughts and triumphs, afforded by association.

He shuts himself up within himself, seeing self encouraging selfishness, suspicion, distrust, and envy, until all better feelings are blunted or entirely destroyed, and all others in the profession, viewed from his stand-point, are precisely his counterpart.

This picture is exactly the reverse of the objects of our society. By mutual exchange of thoughts and ideas and methods of practice, we elevate ourseves and associates, to the same glorious and magnaminous position of working out our profession's good; by association, we gain invigoration and enthusiasm, we have a kindly interest in one another and feel bound as in a common cause.

By uniting forces, of themselves ineffectual, we produce powerful results not otherwise obtained. Through our societies our profession's honor is always fostered or preserved, each member becomes his brother's keeper, ready to chide, advise, encourage, and if need be condemn, and as man is by nature a social being, it seems most fitting that he should ally himself at least with those of his profession or calling, for purposes of advancement, which cannot be otherwise than beneficial.

We will not pursue this idea further for fear of encroaching upon the first subject in our order of business, which we have no doubt, will be ably presented and fully discussed.

We have faith that those of us who have stood shoulder to shoulder as it were, since 1866, will fully appreciate the situation, and work out the problem of reorganization to a successful issue, and having learned experience by the past, lay deep and broad the foundation upon which to build a superstructure that will endure for all time, an everlasting monument to the memory of its founders, and to which all future members of our profession may look with increasing zeal, determined to perpetuate its grandeur and magnificence, and hand it down untarnished in its glorious proportions from generation to generation.

One of our duties at this meeting will be the formulation of a bill regulating the practice of dentistry in this State which will be effective, and a substitute for the one which now adorns our statutes without accomplishing any good for want of an executive clause. What is everybody's business is nobody's, and this saying has been abundantly proven in this case.

Another duty is the framing and adoption of a Constitution and By-Laws suited to our age of progress, and that will be as the mariner's chart to mark out the rocks and shoals which were encountered in our old society, and come near causing a disastrous wreck. These two indispensable duties need not consume much time, as the Committee on State Law is doubtless fully prepared to present a report that will meet your hearty approval, and I am informed, a Constitution and By-Laws will be prepared with so much care, that there will be little to do except to approve.

Let each one of us labor earnestly for the consummation of these two objects, setting aside, if necessary, unimportant personal preferences for the ultimate honor and good of all.

FIBROMA.

BY M. H. CHAPPELL, D.D.S., KNIGHTSTOWN, IND.

Mr. J. B. aged 61 years, small in stature, nervo-sanguine temperament, apparent good health, teeth loose, and excessive deposits of yellow tartar, gums receding with festoons inflamed and turgescent.

The tumor lày in front of and covering the superior incisor teeth, elevating the lip, involving all the structure between the cuspids, and up into the muscles of the lip, and back on a line between the first bicuspids of each side. At the least effort to laugh or smile, the lip would slip over and expose the growth, which was about the size of half a hen's egg, cut lengthwise, and presented rather the appearance of one boiled hard, the shell removed, cut in two equal parts lengthwise, and half of it placed under the lip, except that the growth was in two lobes. The tumor was dense, and offered considerable resistance on pressure. It was white and glossy, resembling tendons, and was imbedded in the lip and gums, with well shaded margins of demarcation between the growth and the normal tissue. Part of one of the lobes was somewhat inflamed, and presented indications of disintegration, showing that the parts might be cancerous, or giving indication that the tumor was complex. My first thought was to prove, in the diagnosis, what it was, or what it was not. The next endeavor was to learn its cause, if visible, from its appearance and structure to classify, and, if possible, to suggest means of removing it, with the possible results.

On raising an edge of one of the lobes, I tracked into an opening, which offered considerable resistance, and found a snag of central incisor. This indicated that it was from an exciting cause, or an explainable growth. The appearance, by sight, and touch, suggested that it was fibrous, or that it originated in connective tissue; and, there being no gland involved, or apparent cachexia, it would not be malignant or recurrent, and hence, benign.

Also, being movable, it was not osteoma, free from mucus (myxoma), fat (lipoma), or fleshy (sarcoma). And it was not in its secondary stage, and resulting in degeneration, or what might be mild cancer.

Therefore it was proved to be firm fibromata. The patient was healthy, and the tumor growing, commenced within two years, with no degeneration of tissues, excepting those of the gums, and that explainable, part of one of the lobes. The growth would proceed and be very troublesome if neglected, owing to possible inconvenient size.

The cause was definitely suggested. The broken tooth, with ragged edge down under the free margin of the gum, to the peridental membrane, or alveolar dental membrane, or the connective cellular tissue between these membranes, must surely be the origin of the tumor. The process of nutrition of the parts was interfered with, by rupture or irritation, and the supply of protoplasm to form fibre tissue, was perverted, in bearing testimony of the injury, and the accumulation of this amœboid protoplasm, forming a distinct pathological cell, which is engrafted into the fibre, and the force of repair being stronger than that of waste, instead of ulceration, the engrafted cell begins a new life, hence a morbid growth. And on the approach of each supply of protoplasm, these masses coming in contact with the waste, on its return, a union is formed, and duplicate nuclei are developed. Similar to, yet unlike the action and results, as we observe in the wall of effusion (Pyogenic membrane) of an abscess. This metamorphosed pabulum now furnishes the engrafted fibre cell with its necessary supply, and the growth continues as the vegetable grafts do, as may be found with any of the florist's hybrids.

It must be observed that in this perverted pathological protoplasmic gland, (we might call it one), the cells, owing to the continued irritation, perversion, or fermentation, will be more or less fungoid, or develope rapidly, possibly approaching a similarity to the development of the torula (yeast plant), in vegetable proliferation in fermentation, hence the rapidity of growth in excess of the normal tissues.

The location of the matrix, or origin of this engrafted cell, decides the character of the growth.

The health of the patient furnishes the tonicity, so the possible inconvenience of its size suggested its removal as soon as possible.

Clinical :—I removed all the twenty teeth, without much complaint from pain; and, as the patient had come some eighty miles for attention, he desired as little delay as possible. Hence after resting him awhile, I removed the snag in the body of the tumor, as it appeared to be, yet it was free from any bony attachment. So far the patient was manifesting considerable nerve, and requested the operation to continue until complete.

With a bistoury I made an incision between the left cuspid and bicuspid, saving the festoon, thence across the mouth to the opposite side, saving the rugæ, which had been pushed back by the encroachment, to form a flap, then, with a tenaculum, holding up the growth and dissecting near the bone, without injuring the periosteum, and coming over the arch and fossæ, and part of the muscles of the lip, underneath, until a complete separation. The bleeding was quite free. I applied a cold wet napkin, allowing the patient to hold his mouth over the spittoon, and in ten minutes bleeding ceased.

The cutting, under the knife appeared sandy. Therefore there was some calcific infiltration; but the main sensation was that of cutting tendons. Although with a keen edge, the cutting was difficult; but the patient made no flinching, and afterwards remarked that it did not hurt much. But the expression of satisfaction that he manifested in having it removed caused me to accuse him of being full of *grit.*

We used no anæsthetics in this case.

I made no dressing of any drug, except directing him to wash his mouth with a solution of common salt every day.

The operation was on the 7th of December, 1885, and I saw the case every few days. Granulations filled in the wound, and the margins began their forward work of building normal tissue; and in fourteen days the mucous membrane was complete. On the 26th day of December, being the nineteenth day, I took the impressions of his mouth for a full set of teeth, and on Jan. 4th, he began wearing teeth made on black rubber plates. The mouth appeared to be in perfect health.

It may be asked, why did you not send him to some physician or surgeon? Well, it was part of the business of my profession to attend to it, as much so as it would have been for a physician, or in other words, it is the duty of the dental surgeon to operate in, or about the oral cavity as the case required, when he can give as good service as any other person.

Correspondence.

"I charge you that this epistle be read."

"PRACTICAL HINTS" vs. "SCIENTIFIC ADAPTATION."

EDITOR JOURNAL:—A copy of a small work published by C. H. Land, of Detroit, has just come into my hands, and to my surprise I find that nearly one-half is reprinted from my "Practical Hints for the Laboratory and Operating room," first published in 1873. I would suggest to Dr. Land, that in the event of the dental profession needing another edition of his compilation, he should add to the title "And appropriation of another writer's book by C. H. Land." To say nothing of the morality of this kind of thing, one would think that common politeness would have suggested the propriety of acknowledging his indebtedness to another in so large a proportion of his matter, but as my little book is pretty well known both in England and America, I am inclined to think this proceeding on the part of Dr. Land will not add to his reputation.

THOS. FLETCHER, F.C.S.

WARRINGTON, ENG.

OBJECTIONS TO THE EXTRACTION OF THE FIRST PERMANENT MOLARS.

ONE objection to the extraction of the first permanent molars, is to be found in the position in which it leaves the remaining molars, in their relation to artificial teeth which may eventually be worn upon the upper jaw.

These remaining teeth are so often pitched forward, at an angle which makes an inclined plane, as to render them useless, because if they meet the artificial teeth, the constant tendency is to crowd the plate forward and so displace it.

Many a set is thus rendered very troublesome until the posterior teeth are ground so they no longer meet.

L. P. HASKELL.

CHICAGO, ILL.

Compilations.

"Gather up the Fragments."

PERSONAL RECOLLECTIONS OF A DENTIST OF THE EARLY DAYS.

BY DR. L. W. BRISTOL, LOCKPORT, N. Y.

About the year 1837 or 1838, there was a dentist in practice in the City of Buffalo, by the name of Bigelow. He used to sally out into the neighboring towns and hamlets, and once dropped down upon the village of Lockport. His fees, in those early days, would compare with and equal the high charges of some of our eastern practitioners of the present day. He spent about two hours cleaning and filling the teeth of the wife of a celebrated lawyer in Lockport, Mr. C——. His charges were fifty dollars. Mr. C—— thought that was a most extravagant price, and said so. Bigelow replied: "We professional men must be liberally paid for our services," and would make no discount. The lawyer paid the bill and took a receipt. After Bigelow had left the village, the lawyer happened to remember that, in a business transaction with some parties in Buffalo, he had taken a mortgage on some real estate there, given by a Dr. Bigelow. He overhauled his mortgages and found this was his man, and that the mortgage was long past due. He set about an immediate foreclosure of the same, in the most expensive way known to the legal profession. Bigelow hurried down and expostulated. He thought the fee demanded was extravagant and extortionate, but Lawer C—— replied: "We professional men must be very liberally paid for our services."

Bigelow once did some work for a lady who said that her husband was a great showman, and he thought that his chance had come to make a strike. He improved the opportunity and charged a big price, which was paid, and a receipt taken. In a short time the man opened a museum, and in advertising his curiosities, after enumerating a lot of rare things, he said: "The most rare and extravagant thing in the whole collection is a

'Dentist's bill receipted.'" And there, sure enough, in a big tin frame, suspended by a chain to a post, in the most conspicuous place in the museum, was Bigelow's bill for dental services for wife. It was a wet blanket for Bigelow, and annoyed him excessively. He finally got a friend to go and buy the thing, paying about the same for it that he had charged for dental services.

About 1844, the late Dr. O. W. May had made a gold plate with six teeth, for a man by the name of Easton. The gums had settled away, the clasps had broken and the plate was loose, and it dropped down when in conversation. Easton had become offended with May, and took great delight in showing the work. He would say, "There is a specimen of Dr. May's work," and then would wobble them up and down. He would not let May touch them, and they were really a very bad advertisement. May said to me one day, "Doctor, I will give you twenty dollars if you will get those teeth out and make him a set." I agreed to try. A few days after I happened to meet the old gentleman, and he showed me how they wobbled. I said to him, "They are not much comfort to you?" "No," he replied; "I stick to them to annoy May, but I am tired of the fun. What will you charge to make me a set that will fit?" I agreed to make them for the old plate and twenty dollars. He came to my office. I took an impression and made him a set that proved satisfactory to him, and he paid the bill. In a couple of weeks I met Dr. May, who said: "I see you have got the old teeth out of Easton's head; here is your twenty dollars." I took the money and said to him, "Here is your old gold plate and teeth; I guess all parties are perfectly satisfied; at least I am." I think that was the only time I ever received a double fee for making a set of teeth.

Dentists in those early days used to visit the surrounding towns and villages a great deal more than they do now. I remember visiting my old stamping ground, Lewiston, and was told that another dentist from an eastern city had come there the day before, had taken rooms and was going to open an office. I got up early the next morning, and took a stroll down to the Niagara River, and as I was returning I saw a man tacking a card on Bartlet's store door. Just then a well-known citizen came along, saw the card, shook the door, and yelled out: "Get up, Bartlet; the sheriff is advertising your premises." The new dentist, Dr. M., replied: "That is not a sheriff's notice; it is a dentist's advertisement." At that the man seized and shook the door more violently than before, crying out at the top of his voice: "Get up, get up, Bartlet, the dentist is advertising your whole real estate." Dr. M. stole away, looking sheepish. In the afternoon I called at his rooms and found him packing up. He said that was no place for him; if he stuck up a card they said he was advertising their property at sheriff's sale. By the way, that dentist has since made his mark in the profession, and is a splendid operator, and an ornament to the profession. He does not as easily get discouraged at a joke now.

There is not now as much ignorance and superstition among the mass of people, relative to the teeth or practice of medicine, as there was forty or fifty years ago. It was not an uncommon request then for our patients to ask us not to touch their teeth with our fingers after extraction, but to roll them up in paper for them. I sometimes had the curiosity to ask what was to be done with them, and was told they were going to bore a hole in a sweet apple tree, put the tooth in and plug it up. Others were going to take the tooth and go out to the woods, turn their backs, take three steps, and throw the tooth back over their heads and say: "Good-bye to toothache." Others were going to burn them, and scatter the ashes to the four quarters of the earth, and in that way get rid of the toothache, but I judge these were of little effect, for I have extracted teeth subsequently for the same persons.

The old superstitions have not entirely died out, and are practiced yet, as witness the carrying of a small potato or a horse-chestnut in the pocket to ward off the rheumatism, or cutting the finger nails only on Friday, to prevent headache, or avoiding the beginning of a journey, or the building of a house, or the commencement of a set of teeth on Friday.

We used to have a great deal of trouble with our porcelain blocks of teeth; they were sure to break, if dropped while carelessly handled. I remember a block of upper teeth put in for the Rev. B——, in one of the neighboring villages. He was in the midst of a morning sermon, and was describing Saul on the road to Damascus. In quoting the passage, "Saul, Saul, why persecutest thou me," he leaned over the pulpit, when his teeth dropped out and fell on the table below and broke in three pieces.

He looked down at the wreck and exclaimed, "My friendth, you thee the fixth I'm in—Amen."

He went home and wrote me of his trouble, desiring me to come to him immediately. I did so the next day, and made him a new set. He was always lecturing me for not being a member of a church, and while at dinner opened on me again. I remarked that it came with ill grace for him to reprove me when he was guilty of transacting and writing business letters on the Sabbath. He denied the charge, and I produced his letter to me, dated on Sunday. His wife remarked, "Now, Father, you had better dry up."

The Rev. Glezen Fillmore, than whom no purer, better man lived, was pastor of a Methodist church then located on Walnut Street. He wore a set of teeth on silver plates, made by Dr. Hains, of Rochester. The plate had cracked between the central incisors, had been soldered, but was giving out again. There was a revival, and at the morning service the church was well filled. I happened to be in attendance, as usual. He was saying, "The spider's most attenuated web is cable when compared to the thread on which hangs the life of poor mortality." Before he got half through the sentence the crack in his plate opened, the solder came off and the words whistled out as though he had a toy tin whistle in his mouth. Everybody was convulsed with laughter. He stopped and sucked away at them, but there was no improvement. "We will turn this morning service into a prayer meeting," said he; "Bro. P——, will you lead in prayer?" He retired to a back room, and directly one of the members tapped me on the shoulder, and said that Mr. Fillmore wanted to see me. When I arrived in his presence he declared that I must accompany him to my office and mend the teeth. I went with him, took the teeth in hand, and he took my bible—I had one in my office, as all well regulated dentists should—and studied out another sermon. I got the teeth mended and in his mouth just as the bells were ringing for evening service. "Now come over and I will give you a first-rate sermon," said he. I did so, and was well pleased that I had done a creditable job in dentistry, and I had no idea that so good a sermon could emanate from my office. Some members of his congregation afterwards suggested that he had better visit my office every Sabbath morning.

The most remarkable case of wearing a dilapidated set of teeth I ever knew, was that of a maiden lady, Miss F——. Dr. Thos. Harrison had made her an upper and under set on porcelain. By some means or other both plates were broken in the center. When I saw her she was wearing the teeth. She would take all four pieces in her hand, put them in her mouth, and with her tongue adjust them to their proper place in less time than I can describe it. It was amusing to hear her talk, as the blocks would rattle and knock together. The ends were worn smooth and rounded off. When she died the teeth were placed in her mouth and buried with her. Don't let any one desecrate her grave in hopes of securing a valuable dental structure.

A few years since, I made a partial denture for a Mrs. L——, a German lady. Every little while she would bring them to me with the left lateral incisor broken. I could not account for it, as she had no antagonizing teeth on the under jaw. I said, "Mrs. L——, I cannot understand this. How do you break that tooth so often?" She hesitated a little, but finally said: "Well, I let Susan wear them when she goes to a party or dance, and she is the one that breaks that tooth off." That explained the mystery. I had made a partnership set of teeth, to be worn by the mother and broken by the daughter. This was the only case I ever knew in which a partial set of teeth could be used by two persons. I finally made a set for the daughter, and had no further trouble with repairing the mother's teeth.—*Independent Practitioner.*

SANITAS.

BY E. S. TALBOT, M.D., D.D.S., CHICAGO, ILL.

My opinion of the above liquid having been sought personally and by letter, I consider it best to publicly express it, as others may be interested. I was induced to try its disinfecting qualities from the following remarks of Dr. Harlan, quoted from page 269, OHIO STATE JOURNAL for June: "Sanitas is a disinfectant. * * * Its elements are capable of combining with sulphuretted hydrogen gas and other products of decomposition, and thereby destroying or removing them." The first quality manifested was its odor, which remained for a great length of time.

I made two applications to the root of an incisor, and was unable to treat further, as the patient could not endure the taste in the mouth. I passed a probe into the canal, and the odor of Sanitas was stronger than sulphuretted hydrogen. I suspected that it had not disinfected, but its own powerful odor had covered other odors. I consequently commenced a series of experiments, and think any one may confirm the results if he will do likewise.

I put a small quantity of H_2S (Sulphuretted Hydrogen) in a test tube and added some water, then put a drop of acetate of lead on a strip of white paper and inserted it into the tube, which immediately turned dark. I put a few drops of Sanitas into the test tube, corked and shook it well, and let it remain a few minutes. I moistened the other end of the white paper with acetate of lead, and dipped it into the test tube. The dark color is the same as before, showing that no chemical change occurred by adding Sanitas. There is a little H_2O_2 (Peroxide of Hydrogen) in Sanitas, but it is so stable that it does not unite with the H_2S, and I therefore see no reason why we should keep such an odorous liquid about the office, merely to get H_2O_2 when the same can be procured in full strength, and is a much pleasanter remedy to use. Also upon page 260 of the *Independent Practitioner*, we find "a great many who complain of want of success with Sanitas can only blame their own carelessness." This statement implies that the writer has a knowledge of the article in question, and that those who have been unsuccessful in its use have not the article to blame, but themselves alone. I differ, most decidedly, with Dr. Harlan on this point, and feel that had there been a more thorough understanding of the properties of Sanitas, it would not have been recommended to the profession as a disinfectant.—*Independent Practitioner.*

THE RELATIONS EXISTING BETWEEN FACIAL NEURALGIA, FRONTAL HEADACHE AND DENTAL CARIES.

During a comparatively short medical career, I have been astonished at the large number of cases which have come under my care owing their origin either to undeveloped teeth or to teeth undergoing a degenerative process, and that, on referring to my case-book, by finding that the percentage of such cases is on the increase.

Some ten years ago I made a collection of human bones and teeth, which I obtained by excavating in the sand-hills on the west side of Crantock, a small village on the north coast of Cornwall. There is no record existing that will account for the presence of such a large quantity of bones there of both old and young human beings. The skeletons are found lying in all directions, and not separated from each other by anything but sand, and I could not find any relic to assist me in ascertaining when and why they were placed there. I obtained several hundred of the teeth, most of which were scattered loose; but some I found *in situ*, which fell out as soon as the surrounding sand was removed. All the lower maxillary bones which I was fortunate enough to find intact differed greatly from those now seen, inasmuch as they are very much larger and the fore part squarer. Those that I saw *in situ* contained the teeth in perfect position and condition, with no jambing of tooth upon tooth. The upper edges of the incisors were regular, and presented no notches or dents. The other bones were correspondingly large, particularly the scapulæ, humeri, and femora. I could not collect sufficient of the latter in a perfect state to take an average length. None of the teeth that I found presented even the slightest appearance of deterioration, although I searched most assiduously for one that did. Although noticing the absence of decay in the teeth, and the larger size of the jaw bones, I attributed it then to a freak of nature; but since I have become better acquainted with the human family, and noticed the great rarity of good teeth and the early appearance of decay, I have begun to think there must be cause and effect to account for the vast difference.

Is not this one of the proofs of the gradual change which is taking place in the construction of the human frame?

Even in the present day we find those members of the human family who use their teeth for chewing coarse uncooked foods, possess masticatory muscles which are prominent and largely developed in a like manner, and teeth which rarely present any appearance of decay. In the civilized races, who feed upon soft cooked foods, we find that the jaws become smaller and more contracted, with a consequent pressing of tooth upon tooth, and decay appearing at a very early age. The decay increases in the younger members as we ascend in the social scale; but it is difficult to arrive at the actual percentage, for the dentist places an obstacle at so doing by removing some of the teeth of the wealthier classes, which is recognized as a necessity if it wished to preserve the remainder.

This alteration in the size of the mouth and condition of the teeth, gradual as it is, is accountable for many abnormal gastric conditions, but more particularly for those pains in the region of the face and cranium, which, I think, are wrongly called "neuralgia" when that term is used to designate a distinct disease, and to be treated as such. Personally, I have never seen a case of "neuralgia" in which I did not find that it was produced by either a carious fang, periostitis of tooth cavity, carious tooth, dead tooth, undeveloped wisdom-tooth, exostosis of fang producing pressure on nerve, hardening of dentine, eventually producing closure of pulp cavity and pressure on the nerve, or too close approximation of the teeth, and which disease always disappeared when these causes were removed. (Of course I do not mean those cases which may arise from pressure of some growth upon a nerve, or where a nerve may be implicated with carious bone or a scar.) I dare say the following clinical records will bring to the reader's recollection many like cases; and my only excuse for so detailing them is to strongly impress the necessity for operative treatment, and not the constant administration of "bromide" and its allies, which often aggravate the dyspeptic symptoms from which the patient suffers:

B. H., female, age 30. When I first saw her she complained of pain in region of the ovaries, and constant pain in the forehead; said she was very subject to "hysteria." As she told me she had a very offensive vaginal discharge, I examined the canal, but found nothing but what ordinary cleanliness would remove. On examining her mouth I found her teeth were artificial, and had been fitted on the stumps of carious teeth. I advised removal of all the stumps, which she allowed me to do, and from that time all the aches and pains disappeared, and the hysteria also. She had a varied experience of medical skill for seven years, and must have taken in that time gallons of physic.

B. S., female, age 28. Complained of earache when I first saw her; otherwise appeared to be perfectly healthy. Could not discover any cause in the external meatus to account for the pain.

The throat was in a normal condition, and the teeth fairly good. Not feeling satisfied as to the cause of the pain, I gave her a mixture of olive oil and opium to drop into the ear, but which produced no benefit. I continued this treatment for some time, when one day she complained of pain over the angle of the jaw on the same side that the ear ached. I carefully examined the teeth and face, and again was baffled as to the cause of it; but a day or so after I found that the tissues behind the last visible molar were swollen. I incised them, which resulted in the discharge of a small quantity of pus. I naturally thought there must be diseased bone somewhere near, and the probe proved that I was right, but not the kind of bone I thought it was. On making freer incisions I found that my carious bone was a carious wisdom-tooth, which had not appeared above the gums. I extracted it, and the earache almost instantly disappeared.

G. T., aged 32, female. When she came for my advice, complained of constant faceache, complicated at times with hysteria. Said she had suffered with it since the age of 19. Had resorted to numberless remedies, but had never had any relief. The teeth, to my astonishment were remarkably good, not one of them presenting any signs of decay. As the wisdom-teeth were not visible, and as she told me they had never appeared, I made an incision over where they should be, and found the crowns about one-sixteenth of an inch below the gums. Thinking the removal of the tension might give relief, I waited for a fortnight, at the end of which time I extracted both, as the pains in face had not decreased. After their removal the pains entirely disappeared, and she has never had a return of them.

Hamilton Moore, Esq., practising as a dentist in Paris, informed me that a lady was sent to him by a renowned European oculist, for the purpose of having the stump of the left canine extracted. On its removal the lady immediately exclaimed, "Why, I can see again!" This lady had lost the sight in the left eye for several years, and had begun to lose all hope of its recovery.

I could relate numbers of like cases of dyspepsia, where ailments all disappeared when the teeth were attended to. It is an invariable rule with me now to carefully examine the teeth when a neuralgic or dyspeptic patient puts in an appearance, and I absolutely refuse to give physic when I find a tooth presents any appearance of caries or retarded growth. I frequently get cases of facial neuralgia where the teeth have been filled, and I always strongly advise their removal, with an invariable result of instant relief, as I have always found that the teeth have been ineffectually filled, either because the whole of the carious tissue had not been removed previous to the tooth being filled, or because there was periostitis of the fang existing with the carious cavity. I remember a case well examplifying the foregoing. A lady came for my advice as to whether a carious tooth should be removed or filled. By the side of it was another which had been previously filled. From the appearance of the tooth that had been filled, and the condition of the gums around it, I felt convinced that it was the offender. I removed it and found my surmise was right, there being an extensive accumulation of pus at the bottom of the cavity, and it had welled up into the pulp cavity underneath the filling. The other tooth was filled and the neuralgia made a speedy exit. No one would dream of giving physic for pain in the knee resulting from hip-joint disease, or pain at top of penis and in the groins resulting from stone in the bladder, and I am of an opinion that it is quite as hopeless to give physic with the intention of curing "facial neuralgia;" but notwithstanding, there are gallons upon gallons of nauseous drugs annually prescribed which may be alphabetically arranged from assafœtida to valerian, when the performance of a quick but painful operation would result in an almost instantaneous cure. Of course I would not extract a tooth, or advise its removal, if I thought the tooth might be saved by being properly filled; but unless the tooth is carefully and tenderly dealt with during the cleaning and filling process, it would be much preferable to have it extracted. There are many dentists, but few good ones—at any rate, that is my experience—and rather than allow a tooth to be treated as a lump of ivory, forgetting altogether its delicate construction, I should always advise extraction, unless the person's means would allow them to place themselves under the care of a thoroughly scientific man.—H. Boyle Runnalls, M.R.C.S., Saltash, in Bristol *Medico-Chirurgical Journal.*

Editor's Specials.

"Write the Vision and make it plain."

IRON IN THE BLOOD—ITS USES.

Too much space, in the opinion of some, may be taken for the consideration of assimilation, nutrition, etc., but we have always found it most profitable to consider such subject as thoroughly as we can when it comes up. Lately the thoughts of dentists have been inclined in this direction, and on the principle of striking while the iron is hot, we give our own sentiments to be put into the general supply.

Elsewhere, and at other times we have spoken of iron existing in the blood either as a carbonate of the protoxide, or as a sesquioxide. We use the older nomenclature, partly because we are more familiar with it, and partly because it is probable that at least half our readers can follow it more readily than they can the new. And if all would lay aside the idea that the interchange of gases in the lungs is very mysterious, and instead, realize that the gases there obey the same laws as to diffusion, compression, etc., and possess the same affinities that they do elsewhere, at least half the work of understanding the matter would be accomplished.

Bear in mind, then, that the iron starts from the left ventricle to pass throughout the entire body, as a sesquioxide, twenty-eight parts of iron carrying, in combination, twelve of oxygen, having thus four parts, or a half equivalent, to spare. By giving out this excess of oxygen, as it passes in the circulation, in obedience to the ordinary laws of affinity, it affords force to carry on the functions of organic life. On the principle of correlation of forces, this affinity, or chemical force, is changed into vital force to carry on respiration, the contraction of the heart, the various secretions, in short, all the functions above the control of will power. The iron as it starts from the left ventricle, then, is a carrier of oxygen. It has just been changed to a sesquioxide in the lungs, by the free oxygen of the atmosphere, and has been sent direct to the ventricle for general distribution.

But as it gives off oxygen in passing with the blood, it is reduced to a protoxide, which is a basic oxide, and the carbonic acid in the blood combines with the protoxide, giving the carbonate and as a carbonate it continues, and, by the right ventricle of the heart, is driven to the lungs. It is as well satisfied to be a carbonate, but the free oxygen of the atmosphere at once presses into the air cells, with nearly fifteen pounds of pressure, as the chest expands by the action of the muscles of respiration; and this oxygen wants the iron and takes it, making it, as before said, a sesquioxide. But carbonic acid can not combine with the sesquioxide, and is therefore, set free. And being freed just under the thin, porous membrane lining the air cells. which membrane is pressed firmly against it by the weight of the atmosphere, in strict obedience to the laws of gaseous diffusion, it passes through the membrane and out with the expiration. Obeying the same laws of diffusion, atmospheric air passes inward through the membrane, and gives the iron oxygen enough to change the protoxide to a sesquioxide.

It is quite probable that the iron carries all the oxygen used in giving force to organic life; but this has nothing to do in reference to the passive oxygen stored in the red corpuscles, to be called into activity by the efforts of the will, as force for voluntary action of mind or body is called for.

Let it be granted that the iron in the blood is carried among oxidizable materials, and that free carbonic acid is found in contact also on the route, and that it is, in turn, carried to the lungs, where it meets free oxygen, and the changes from sesquioxide to a carbonate of the protoxide must occur with every round. With the same conditions out of the body the same changes would occur, hence it is not mysterious that they take place in connection with the circulation and respiration.

And probably nothing in the science of therapeutics is better recognized than the fact that iron, in almost any of its compounds, and certainly in its metallic state when minutely divided, if medicinally administered, is changed by the chemico-vital processes, into the forms needed by the constitution. And whether inorganic matter can be assimilated or not, it is likely that physicians will continue to successfully administer iron, in some form, to pale, anæmic girls, who will continue to gain rosy cheeks, as they improve in general health and gain in strength and vigor.

We have tried to be minute as well as accurate in this description of iron as a constituent of the blood. We hope that any reader who does not already understand it will study the subject carefully. A clear understanding of any one physiological problem is worth more than a beclouded theory in reference to a dozen. Clear thinking strengthens the mind, while mental wading and struggling after the truth confuses and weakens.

We think we have told above what actually occurs; and we prefer facts in science to even the most beautiful figures, such as "courting grip," "marrying grip," etc., even though we may have failed to give "you the last bottom letter of the alphabet of function."

The young patient whose blood lacks iron can not develop good teeth.

APOLOGETIC? OR(?)

Some readers of the Journal may think that the Specials for this month are too much devoted to theory rather than practice, —that they reach after science, to the neglect of art. After thinking it over we plead guilty and stand up for sentence—No! for sentences! That is, we want *sentences*, and these made into paragraphs, and these into contributions for the pages of the Journal. In other words, let it be remembered that our days for actual practice in the handicraft of our profession are with the past, and we are told to

> "Let the dead past bury its dead,"

whatever that means. So while we wait for and watch scientific and theoretical progress, we think each one of you in daily practice ought to tell about the practical details, the progress in our art, and the cases of general, and even special interest, that occur in your daily practice. You can all do it, and the pages of the Journal are open to, and waiting for you. Some of you say you can't write; and were it not that you make the statement through honest ignorance, it would be a falsehood. You can tell your fellow practitioners about your cases, and you can put down the same words with your pencil, and you'll find that we understand them. And if they should need a little trimming up, or smoothing down they can be edited as others are.

To be interesting, a case need not be strange or singular. Your brethren wish to know how you treat everyday cases; and you wish to know how they treat them.

A report of surgical case, like that of Professor Chappell's in the present number, is very readable. It helps to teach the general surgeon that he has a competitor, at least in oral surgery; and it helps to give confidence to dentists, and to teach them to respect themselves and their profession. Besides, it is, in general, safer for the patients with this trouble to fall into the hands of the dentist. We speak freely on this as we have practiced both professions. In several cases, much like that of Professor C., we have had trouble to keep the general surgeon from removing the entire maxilla, under the belief that the tumor was a case of osteo-sarcoma. Such uncalled for operations have been performed, and probably will be again.

Give us long or short reports of cases, without waiting for peculiar ones to describe. Or write your opinion of something that is of present interest to the profession. Or give us a racy or slow supply of professional gossip, and by doing so you will improve your own talents, and advance the interests of the profession. All are aware of the progressive impulse gained by a meeting of a society, and this comes mainly from a free exchange of thoughts and opinions of those present. But by using the Journal's pages as we are suggesting, a similar progressive impulse can be made continuous; and you all know that this could not fail to be profitable.

The moral of all this is that you are to overwhelm us with your pens.

THIRST.

Thirst calls for water; and ether, or mixed liquids will act as substitutes only as they contain, or are in part composed of water.

Ask a child where it is thirsty, it will point to its mouth or throat. When something older it will probably claim that the stomach is the seat of thirst.

But, as in allaying or quenching thirst, water permeates the entire vascular system,—and is even extra-vascular, as well, we can bear in mind that all parts or tissues reached by water in relieving thirst, are active in their demands for water, thus giving the sensation known as thirst. Many in their physiological researches have inquired after the locality of the seat of thirst; and such may as well be told that it has no *seat*,—it *stands up* throughout the entire physical organization.

When a blood corpuscle lacks water, it shrivels. When a terminal nerve loop is short of its proper supply of moisture, it cannot perform its functions in a normal way, and even in its efforts to do so, there is pain or at least discomfort. When the blood lacks water it circulates sluggishly. All things considered, we may conclude that thirst is the sensation caused by the entire system pleading for water.

But does not the system, in discharging its various vital functions, show great extravagance by its wasting so much water? Think how much of it escapes through the skin in the form of sweat. Also large quantities escape with every breath. To say nothing of the action of the kidneys, and the mucous lining of the intestinal tube, it certainly seems that too much is wasted.

And what is gained by drinking water, if it is to come right out again? It seems quite as useless as breathing—drawing atmospheric air into the lungs, and blowing it out again. And why drink *inorganic* water when plenty of *organic* is supplied with the food? Just think of a turnip, or a juicy apple, without naming the watermelon, and are you not persuaded that the system gets all the water it needs, and more, from the food that is eaten? And is not the expulsion of water from the system proof positive "that Nature has more than she has any use for and has thus thrown it off?" And besides the water in the food, the system can and does elaborate it from the elements which compose it, and which are found in the food. It should be taught to depend on these two sources entirely, and not take it "from any ready made source;" for have we not been told that "It must elaborate its own material under all circumstances?"

No doubt much of the water given off in perspiration, etc., has been formed by the oxidation of hydrogen within the body. Many foods are rich in carbo-hydrogens, if the term can be endured, and the oxidation of these in the body gives the same results as their oxidation outside of it. Carbonic acid and water are, in each case, the results of burning them. Warmth rather than tissue is gained by their appropriation.

Notwithstanding the fact that most foods are rich in water, or in the elements from which it may be elaborated, it is generally recognized that more is needed than can be obtained from the food. In other words, it is recognized that thirst is physiological.

HOW MANY WORDS HAVE WE?

Good Lindley Murray in his *English Grammar* has this statement: "The whole number of words in the English language are about thirty-five thousand." The thought of having to master so many definitions before gaining the ability to use the language successfully was a great discouragement to our boyish ambition. We felt quite unequal to the task.

Afterward when we read in a political paper that Daniel Webster used less than twenty thousand words in his speeches and writings we felt better. Probably few writers use thirty thousand.

Some twenty years ago we heard a popular college president estimate the number of English words at one hundred and sixteen thousand. There are many more now than then.

It is not probable that any man living can use, without special study, one half of our words, yet how often we feel as if a new word were needed. Still it is far better to aim at a general and intelligent use of the words we have than to strive after new ones. We have previously given our opinion of some of the attempted coinings of words by members of our profession, *pulpitis* being taken as a type of the class. Such words are not analagous to *gastritis*, *stomatitis*, etc., already in use, and they show a want of a classical education on the part of those trying to introduce them.

The severest condemnation of our language for its poverty that we have lately noticed is in the sentence lately read: "The nomenclature that we are obliged to use because of the paucity of words is very unsatisfactory, but it is the best we have." We presume that it might be truthfully added that it is the best ever had by any portion of the human race. A persistent, careful effort to master it is probably the most useful portion of an educational course.

BANDAGING FOR HUNGER.

WHILE journeying on horseback in 1841, we overtook a boy of sixteen, on foot, going from a village near Chillicothe, O. to Kentucky, to buy a cargo of hemp for his crippled father, who was a rope maker. His name was Napoleon Bonaparte Fisher, and for over six hours of that day he walked four miles an hour. His own money was just enough to pay his passage on the ferry boat. His father's was sewed under patches in his homespun clothes. We gave him his dinner, within twenty-five miles of his destination, which he intended to reach before sleeping. We asked him what he would do for supper; and he replied by placing his hand on a leathern belt around his waist, and saying, "I'll buckle this two holes tighter." To prevent the strain on the belt, we almost forced him to take a pittance, by telling him he had earned it by handing us refreshing drinks from springs by the road side, using his new tin cup that hung from his belt while he walked.

Napoleon's idea of tightening his belt made a lasting impression upon us; and it is freshly brought up by the remark of our special friend Dr. Atkinson, made at Minneapolis. The doctor's remark is as follows: "The proof that the hunger is not in the stomach is this: when the individual is hungry and from false mental interpretation has referred the sensation to his stomach he has entirely misapprehended the fact. He would not be hungry if he would put on a belt and draw it up as the Indian does, thus bringing the walls of the stomach and the entire contents of the abdomen in close enough proximity to keep up the blood tension that will carry the blood to the needy territories."

Some of our remarks on thirst in this number will apply as to the location of hunger. Every tissue that is wasting calls for new matter. A simple experiment in relieving hunger promptly is interesting and instructive. When hunger has become rather urgent, if we take solid food, the relief is not very decided till the gastric juice has had time to dissolve it; and this is reasonable, for till dissolved it cannot take a start on its nutritive mission. But a well prepared soup gives almost instantly a sense of comfort and relief. Passing, in part at least, almost immediately into the ducts, it is received at the "needy territories."

NEW DENTAL LAW.

We hope every dentist in the State will make it his or her business to aid in securing the passage of the proposed new dental law. Interview your representative and urge the adoption of the bill, as printed on this page of the Journal. It has been carefully prepared and is just what is needed both by the profession and the public. What is done should be done promptly that Ohio may fall into line and not be a refuge for those who cannot practice in the States having such Registry laws.

PROPOSED NEW DENTAL LAW FOR OHIO.

TO INSURE THE BETTER EDUCATION OF PRACTITIONERS OF DENTAL SURGERY AND TO REGULATE THE PRACTICE OF DENTISTRY IN THE STATE OF OHIO.

Be it enacted by the General Assembly of the State of Ohio :

Section 1. It shall be unlawful for any person who is not at the time of the passage of this Act engaged in the practice of dentistry in this State, in conformity to the laws of Ohio existing at the time of the enactment hereof, to commence such practice, unless such person shall have obtained a certificate as hereinafter provided.

Sec. 2. A Board of Examiners, to consist of five practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this Act. The members of said Board shall be appointed by the Governor, who shall select them from ten candidates, whose names shall be furnished him by The Ohio State Dental Society. The term for which the said members of said Board shall hold their offices shall be three years, except that two of the members of the Board, first to be appointed under this Act, shall hold their office for the term of one year, two for the term of two years, and one for the term of three years, respectively, and until their successors shall be duly appointed and qualified. The Governor shall determine by lot the terms of the first appointees of this Board. In case of a vacancy occurring in said Board, such vacancy shall be filled by the Governor in conformity with this section.

Sec. 3. Said Board shall organize immediately after their appointment by choosing one of its members President and one the Secretary thereof, and it shall meet at least once in every year and as much oftener and at such time and places as it may deem necessary. A majority of said Board shall at all times constitute a quorum, and the proceedings thereof shall, at all reasonable times, be open to public inspection.

Sec. 4. Within six months from the time that this Act takes effect, it shall be the duty of every person who is now lawfully engaged in the practice of dentistry in this State, to cause his or her name, place of business and residence to be registered with said Board of Examiners, who shall keep a book for that purpose. The statement of every such person shall be verified under oath before a Notary Public, in such manner as may be prescribed by the Board of Examiners. Every person who shall so register with said Board as a practitioner of dentistry shall receive a certificate to that effect, and may continue to practice as such without incurring any of the liabilities or penalties provided in this Act, and shall pay to the Board of Examiners for such registration the sum of one dollar. It shall be the duty of the Board of Examiners to forward to the County Recorder of each county in the State a certified list of all persons residing in his county who have registered in accordance withthe provisions of this Act, and it shall be the duty of all County Recorders to register such names in a book, to be kept for that purpose.

Sec. 5. Any person, who shall so desire, may appear before said Board at any of its regular meetings and be examined with reference to his or her knowledge and skill in dental surgery, and said Board shall issue to such person as it shall find to possess the requisite qualifications a certificate to that effect, in accordance with the provisions of this Act. Said Board shall also indorse as satisfactory, diplomas from any reputable dental college, upon the holder furnishing evidence satisfactory to the Board of his or her right to the same, and shall issue certificates to that effect within ten days thereafter. All certificates issued by said Board shall be signed by its officers, and such certificates shall be prima facie evidence of the right of the holder to practice dentistry in the State of Ohio.

Sec. 6. Any person who shall violate any of the provisions of this Act shall be deemed guilty of a misdemeanor, and, upon conviction, may be fined not less than fifty dollars nor more than two hundred dollars, and shall be committed to the county jail until such fine be paid, or confined in the county jail for each and every offense. And it shall be incumbent on the defendant to show that he has authority under the law to practice dentistry to exempt himself from the penalty hereby prescribed. All fines recovered under this Act shall be paid into the Common School Fund of the county in which said conviction takes place.

Sec. 7. In order to provide the means for carrying out and maintaining the provisions of this Act, the said Board of Examiners shall charge each person applying for a certificate and having a diploma from a reputable dental college a fee of five dollars and each other person appearing before them for examination for a certificate of qualification a fee of ten dollars, which fee shall in no case be returned, and out of the funds coming into the possession of the Board from the fees so charged, and penalties received under the provisions of this Act, all legitimate and necessary expenses incurred in attending the meetings of said Board shall be paid. And no part of the expenses of the Board shall ever be paid out of the State Treasury. All moneys received in excess of expenses, above provided for, shall be held by the Secretary of said Board as a special fund for meeting the expenses of said Board, and carrying out the provisions of this Act, he giving such bonds as the Board shall from time to time direct. And said Board shall make an annual report of its proceedings to the Governor, by the first of January of each year, together with an account of all moneys received and disbursed by them pursuant to this Act.

Sec. 8. Any person who shall receive a certificate from said Board to practice dentistry, shall cause his or her certificate to be registered with the County Recorder of the county in which such person may reside, and the County Recorder shall charge for registering such certificate a fee of one dollar. Any failure, neglect or refusal on the part of any person holding such certificate to register the same with the County Recorder as above directed, for a period of three months, shall work a forfeiture of the certificate; and no certificate when once forfeited shall be restored, except upon the payment to the Board of Examiners of the sum of twenty-five dollars, as a penalty for such neglect, failure or refusal.

Sec. 9. Any one who shall knowingly or falsely claim or pretend to have a certificate or license, diploma, or degree granted by the Board of Examiners, under and pursuant to the provisions of this Act, or who shall falsely and with intent to deceive the public claim or pretend to be a graduate from any incorporated dental college, shall be deemed guilty of a misdemeanor, and shall be liable to the same penalty as provided in section six.

Sec. 10. Any member of the Board of Examiners may grant a permit to practice until the next meeting of the Board, but such permit shall be valid only until said next meeting, and shall in no case be extended except as provided in section five of this Act.

Sec. 11. Nothing in this Act shall be so construed as to prohibit any practicing physician or surgeon from extracting teeth.

Sec. 12. The original sections 4404 and 6991 be and the same are hereby repealed; and this Act shall take effect and be in force from and after its passage.

Societies.

"Wherewith one may edify another."

SOCIETIES.

Ohio Dental College Association, Cincinnati, Tusesday, March 2, 1886.

Mississippi Valley Association of Dental Surgeons, Cincinnati, Wednesday, March 3, 1886.

Northern Ohio Dental Association, Cleveland, Wednesday, May 11, 1886.

Illinois State Dental Society, Rock Island, Tuesday, May 11, 1886.

Mad River Valley Dental Society, Dayton, Tuesday, May 18, 1886.

Kentucky State Dental Society, Louisville, Tuesday, June 1, 1886.

Indiana State Dental Association, Indianapolis, Tuesday, June 29, 1886.

Southern Dental Association, Nashville, Tenn., Tuesday, July 27, (instead of May 25), 1886.

MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

The forty-second annual meeting will be held in the lecture room of the Ohio Dental College, Cincinnati, commencing [our recollection is that Wednesday March 3 is the correct date but the announcement sent us by the executive committee reads—Ed.] Tuesday, March 2, 1886.

PROGRAMME.

I. Treatment of Pulpless Teeth, J. W. Jay, Richmond, Ind.

II. Some Phenomena Observed in the uses of Antiseptics in Oral Surgery, H. A. Smith, Cincinnati, O.

III. Bridge Work, J. E. Low, Chicago, Ills.

IV. Clinic; Bridge Work, Artificial Crowns, Herbst Method, Dental Appliances, etc.

V. Report of a Case of Death by the Lodgement of a Partial Denture (gold) in the Bronchial Tubes, J. W. Jay, Richmond, Ind.

VI. Amalgam Fillings from the Standpoint of to-day, C. M. Wright, F. A. Hunter, Cincinnati.

LOUISIANA STATE DENTAL SOCIETY.

The annual meeting will be held in Tulane Hall, at New Orleans, the 4th, 5th and 6th of March, 1886. The profession at large are cordially invited to attend. The Mardi Gras festivities together with the Exposition here (now in full blast), as also cheap railroad rates and mild weather ought to be sufficient to induce our brother dentists to pay us a visit. Any information as regards meeting and accommodations, etc., will be cheerfully and promply furnished by addressing

P. J. Friedrichs, Ch. Ex. Com.,
153 Carondelet St., New Orleans, La.

INDIANA DENTAL COLLEGE ALUMNI.

The seventh annual meeting will be held in the lecture room of the college, Indianapolis, Ind., Wednesday, March 3, 1886, at 2 o'clock P. M. Interesting papers and discussions. Banquet in the college hall, music by Booth's orchestra.

J. E. Bodine, *Sec'y.*

OHIO COLLEGE OF DENTAL SURGERY.

The annual commencement will take place in College Hall, Walnut street, Cincinnati, Wednesday evening, March 3. Annual meeting of Alumni Association same day at 10 o'clock A. M.

H. A. Smith, *Dean.*

ST. LOUIS DENTAL SOCIETY.

At the annual meeting held January 5th, 1886, Dr. Wm. N. Conrad was elected President; Dr. Geo. A. Bowman, Vice-President; Dr. A. H. Fuller, Cor. Secretary; Dr. J. L. Foster, Recording Secretary; Dr. H. H. Keith, Treasurer.

A. H. Fuller, *Cor. Sec'y.*

UNIVERSITY OF CALIFORNIA COLLEGE OF DENTISTRY.

The fourth annual commencement exercises of the College of Dentistry of the University of California, were held in connection with those of the Medical Department at the Grand Opera House, San Francisco, Tuesday, November 10th, 1885.

Number of matriculates for the session, thirty-seven (37.)

The degree of doctor of dental surgery was conferred upon the following graduates: Harry Sylvester Bettis, George Botsford, Daniel Barratt Cate, Nathaniel Thomas Coulson, George Ihnier Drucker, William Ellis Fitzpatrick, Walter Robert Henderson, John Adams Douglass Hutton, Franklin Pancoast, Charles Theodore Rodolph, Frederick Judson Saxe, A. M., Joseph Schneider, Henry Sylvester, Jr.

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OF
DENTAL SCIENCE.

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Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

ALLOTROPIC INFLUENCE ON MEDICINES.

BY GEO. WATT, XENIA, O.

[Read before the Xenia Academy of Medicine.]

NEARLY, if not quite all remedial agents are chemical reagents. That is, they possess chemical affinities sufficient to incline them to combine with other and dissimilar materials. And this tendency to combination often results in the separation of elements or compound radicals from the substances acted on. The affinity, in any given case, may affect only a part of the agent likely to be decomposed by it. For example, iodide of potassium is a neutral salt very likely to be decomposed by active oxygen, called ozone; but the oxygen has very little tendency to combine with the iodine, while its affinity for potassium is one of the strongest known in chemistry. So strong is this affinity that water is at once decomposed with rapid combustion, as soon as potassium is brought into contact with it.

Now it is possible that many prescriptions are made that prove inert, or worthless, if not mischievous, for lack of due consideration of the tendencies toward new combinations. Not long ago we saw a prescription intended to arrest hemorrhage, in which acetate of lead and sulphate of zinc were placed in the same dose. The physician was probably well aware of the fact that each salt is an active astringent, but he had probably altogether forgotten that sulphate of lead is insoluble, and that, therefore, there would be double decomposition and recombination, resulting in sulphate of lead and acetate of zinc. The latter of these is an astringent, while the other is inert, hence either one of the original salts would have given him as good results as he gained from both.

Sometimes we may be fully aware of the tendency to change, through affinity, yet not able to control the changes so that the desired one of those possible may take place. As an illustration, we have in sulphur a substance in itself nearly inert, but some of its possible combinations are very active. In some cases of general prostration, as through blood poisoning, this substance would be the best medicine possible, perhaps, could we but control the direction of its affinity. Let it combine with oxygen to the degree necessary to produce sulphurous acid, and we have a very active disinfectant, antiseptic, alterative, and anti-alkaline, if the word can be tolerated. It is well known that sulphurous acid, and also the sulphites, which are the compounds it forms with alkalies and alkaloids, are able to prevent and ordinarily to arrest fermentation and the preliminary steps towards putrefaction. In the visitation of Asiatic cholera in 1849, we used sulphur in many cases, and very often with apparently good results. We learned to rely on it more when ozone was found plentiful in the atmosphere; and it may be possible that the greater proportion of active oxygen tended to its oxidation rather than to the formation of other compounds.

Let the sulphur undergo oxidation to either the first or the second degree, thus being converted into sulphurous, or to sulphuric acid, and the possible influences are not difficult to calculate. Consider the former. It may be dissolved in the gastric fluids, either free or combined, and carried into the circulation. In itself it is an antiferment; but in the route it readily finds materials with which it may combine. Alkalies, alkaloids, or alkaline carbonates may meet with it, and combination ensue. Suppose it finds carbonate of potash or soda, the base is taken, and a *sulphite* is formed, while carbonic acid is set free. And it is not necessary to delay to remind the reader that the system is always ready to take care of a little carbonic acid in the general circulation. The sulphite thus formed is itself an antiferment, and thus, and otherwise not necessary to mention, it is a blood purifier.

Changed to the second degree, or sulphuric acid, the results are not very much different, one leading difference, however, being found in the fact that the *sulphates* are not antiferments, to the extent that the sulphites are.

Now in very many cases, in the practice of general surgery, and also in the specialty of dental surgery, the general, or constitutional action of sulphurous acid is very desirable. But how to obtain this action to an efficient degree is a suggestion more readily made than answered. One would think that the sulphurous acids of the shops might be readily obtained and easily administered. But the acid of the shops is simply an aqueous solution of the acid in its quiescent condition. When copper or a similar metal decomposes the sulphuric acid of commerce, sulphurous acid rises as gas bubbles. These, as they escape may be collected and condensed in water, thus giving the watery solution of the acid. But this solution does not meet the wants, nor fulfill the indications of surgical science, general or special. The trouble is that the acid, when thus prepared and ready for use is passive, while we want it active.

But however desirable it may be to have it oxidized when sulphur is administered as a medicine, let us suppose it takes a course entirely different, and unites with hydrogen, and we have an acid, to be sure, but in the form of a very offensive, stinking gas, that is very easily decomposed. This gas is often, if not generally, called sulphuretted hydrogen, and it is a principal cause of the bad odor of a rotten egg.

Acting locally on the mucous membrane of the intestinal canal, it causes uneasiness, and often severe pain. Acting on the terminal nerve loops it often causes spasmodic contraction of the muscular fibres of the bowels, causing a sensation like colic, if not actually producing the disease. This acid, too, is soluble, to some extent, in the gastro-intestinal fluids, and may be taken into the general circulation. And if there, it must act as a deadly poison. Its sulphur will take iron from the red corpuscles, which renders the iron wholly unable to longer carry the oxygen necessary to give force for organic life. Not only is there the strong affinity of iron and sulphur for each other to induce this change, but the oxygen found in the blood may take the hydrogen of the poison, to form water, thus liberating sulphur in its active condition. But the sulphide of iron can perform no useful function in the blood, and therefore the function of the red corpuscles is destroyed to the extent of the changes thus occurring.

Before this, and often, indeed, we have alluded to the two conditions of oxygen, the active and passive, sometimes called the *nascent* and the *quiescent.* This allotropic fact may be demonstrated in many ways. Even though the affinity of oxygen and hydrogen is the strongest known to chemistry, other things being equal, these gases may be kept together indefinitely without combination. The common explanation is that the gaseous state is unfavorable to combination because the particles are so far separated as to be beyond the range of affinity. But by passing an electric spark through the mixture combination instantly takes place. And why? Some say that on the principle of electric attraction and repulsion the particles are pressed together; but this doesn't seem satisfactory. Is it not more natural to conclude that the gases are changed from the passive to the active state by the electric force? As stated elsewhere, iron may be kept in oxygen indefinitely without oxidation or rusting, but an electric spark passed through the oxygen so changes it that the iron is rapidly corroded.

Not only by electricity can passive oxygen be rendered active, but heat accomplishes the same result. As before noticed iron may remain submerged in oxygen unharmed, but by heating a portion of the iron, the atoms of oxygen in contact with it are rendered active and rapid combustion of the iron ensues. Also, it is rendered active by pressure, as in the fire syringe. All, perhaps, have seen portions of spunk or tinder, porous materials composed of carbon and hydrogen, ignited by simply condensing atmospheric air in a syringe. A small pocket syringe was used by our paternal ancestor for lighting his pipe, previous to the use of matches. Mechanical force, as when the steel strikes the flint, causes a small particle of the steel to be burned into black oxide of iron and carbonic acid, which would not occur with passive oxygen.

But let us suppose the dentist, or the general surgeon desires the action of oxygen. He may remember that oxygen is soluble in water, and hence feel like relying on a soluble watery solution of it. And we must not deny that something may be gained in this way, for running water we know is purified by the impurities in it being brought in contact with the oxygen in solution; but to rely on such solution for surgical purposes is almost as if the metallurgist should rely on an aqueous solution of chlorine to dissolve his gold. He will want the *aqua regia*, which yields him active or *nascent* chlorine; and the surgeon will want active oxygen. It is evident that the surgeon or dentist can not render it active for practical purposes, by any of the processes above mentioned, hence he must find some way of getting it on duty while still active—before it has assumed the quiescent state.

Generally, if not always, chemical reagents are active when they form combinations with other and dissimilar materials. This is probably the explanation of the fact that they are always active when being separated from such combinations, and this explains why the active state has gained the name of the *nascent* condition. And this principle holds good both in analysis and synthesis, that is whether the reagent is being separated from a combination or is being formed by a combination of its elements. To illustrate: Carbonic acid, composed of oxygen and carbon, may be separated from an alkaline carbonate by heat, or by contact with a stronger, or fixed acid. Add sulphuric acid to carbonate of soda, and the carbonic acid escapes as a gas. It was active when it united with the soda, and is still active when it lets go. How long it remains so is not under discussion here. It is common to speak of the acid secured in this way as obtained by *analysis*. But it is formed whenever carbon is burned with free access of air, whenever charcoal is combining with oxygen. And in being thus formed, by *synthesis*, it is active.

After this illustration turn back to oxygen. The surgeon, or the dentist, as well, wants *active* oxygen; and fortunately he can get it. Quantity of matter is one of the circumstances modifying affinity; and though the affinity of oxygen and hydrogen for each other is very strong, and in the first degree of their combination they are hard to separate, as in this they form water, yet when the oxygen is forced on the hydrogen to the second degree, it must surely be active in order that combination may take place at all, and this second installment of oxygen is held by a very slight tie, a feeble affinity, and is therefore easily separated, leaving the two elements in their favorite combination, water, and consequently whenever the peroxide of hydrogen is placed in contact with hydro-carbonaceous matters, they take half the oxygen and are oxidized or burned more or less thoroughly. When completely burned the results are carbonic acid and water, but it is well known that from the oxidation of hydrocarbons we may have carbonic oxide, carbolic acid, creosote, coal tar, etc. And thus is explained the action of the peroxide on purulent matter. There may be complete combustion with the escape of carbonic acid gas, causing effervescence or frothing, and at the same time, part of the morbific materials may be burned into one or other of the antiseptics above mentioned. Admitting this explanation of the *modus operandi* of the peroxide of hydrogen, its curative powers lose all their mystery. When the carpenter, returning from a holiday excursion, finds the shop floor clean, and asks the apprentice what has become of the chips and shavings, and is answered that they are burned, he is satisfied, as may be the surgeon or dentist in this case.

We have heard the action of peroxide explained on the germ theory, by stating that while oxygen is necessary to the life of some germs, it is fatal to other varieties. But oxygen, in the state here described, would constitute an atmosphere fatal to germs, vegetable or animal, as well as to horses, dogs, men, women, mules, and all other kinds of cattle. Were the oxygen of our atmosphere active, it would not support respiration, but as a corrodent would destroy life.

The influence of active oxygen, or ozone, if the term is preferred. in the atmosphere is noticeable to any careful observer, during and after prolonged electric tension. When it is noticed that the lower margin of clouds nearly motionless take the shape of the earth's surface beneath them, we may know that the electric tension is such that countless numbers of infinitesimal electric sparks pass and repass, and that more than the usual proportion of atmospheric oxygen is thus rendered active, and in consequence the mucous membrane of the air passages is irritated, resulting in epidemic catarrh, often called influenza. And this is produced when a very small per cent. of the oxygen of the atmosphere is thus changed, and therefore we may readily appreciate the dread consequences were it all so changed. Yet even thus it would still be diluted with nitrogen, carbonic acid, vapor of water, ammonia, and other gases and vapors pertaining to, or commingled with the atmosphere, while the oxygen escaping when the peroxide of hydrogen is decomposed is not only active, but undiluted. What kind of a germ could endure such an atmosphere? And could it not as well endure the seven-fold heat of Nebuchadnezzar's furnace, without the escort who kindly accompanied Shadrach and companions?

It is not here asserted that all medicinal agents, nor even all chemical reagents are subject to the influence of allotropy; but we have seen that some of the best known and most generally used ones undoubtedly have their active and passive states, while there are plain indications in this direction in reference to others, which suggest a wide field for research, in a soil where "paying dirt" can be found. We firmly believe that increase of knowledge in this direction will be well marked and highly useful. Our aim here has been to give a mere hint to others who are still active, and able to investigate; and we supposed a page would be all the space we would need, yet all know how thoughts not quite matured take up space. We hope some of our readers will continue the subject, and give us more light.

RULES OF DISCUSSION AND CRITICISM.

BY THE EDITOR.

HUMAN things must be criticised. Men differ in opinion, and each regard it as his prerogative to advocate and disseminate his opinions. This is right, and, therefore, accords with the fitness of things.

These thoughts are suggested by the article on "Textile Foil" in our February number. We regard the discussion as candid and friendly; and such we are always ready to admit to our pages. We like to have both sides, and to give equal opportunities for their advocacy. It is not necessary that a writer agrees with our opinions to get into our pages. Agitation by proper discussion, is likely to bring out the truth.

Of the material called "Textile Foil," which is under consideration, we know nothing practically and experimentally, as we were forced out of practice before its introduction. So many in whom we have confidence have spoken well of it, that we have been quite favorably impressed by it. Our friendliness to its inventor has probably tended in the same direction. But we learned long ago that good men differ in opinion about many things. In the "Robinson Remedy" we have had this illustrated. Dr. R. gave minute directions as to its preparation, and soon after these appeared in the Journal, a talented member of our profession, experienced, and holding responsible positions, endeavored to follow the directions in its preparation and use, and found it wholly impracticable, and in his hands not fit for use—not even safe. He proved by experiment that it was an active caustic. But the same mail, and several following, brought messages from professional brethren praising it, and giving it credit for more than its inventor claimed.

Our plan in the Journal is to let all sides be heard. Only good comes from agitation. It is the pool, not the rill that becomes offensive and putrid. The one man's failure with the "Robinson Remedy" taught care in its preparation and use, while it detracted nothing from the successes of the inventor and others.

If the "Textile Foil" is meritorious, it will bear up under discussion. If some have succeed in accomplishing all that is claimed for it, and others have fallen short of such attainments, it is probable that there is something special in its manipulation, a principle not caught, at first, by all. All will remember the long discussions about adhesive foil, cohesive foil, hard foil, soft foil, light foil, heavy foil, thin foil, thick foil, till foil itself became a byword. In like manner was the mallet discussed, in a rhyming Apostrophe, with a rhyming reply, by the Waye, till we all heard of light mallets, heavy mallets, elastic mallets, inelastic mallets, big mallets, little mallets, steel mallets, ivory mallets, lead mallets, brier-root mallets, till the mallets themselves became disgusted, and turned to *hammers*, and these to electro-magnets. But through all these, and partly *by* all these, operative dentistry made rapid and steady improvements.

Let the discussions go on, in the periodicals and in the societies. Discuss the principles and the *things*,—not the advocates of the former, nor the inventors of the latter. A man may hold any opinion, and we may, and are free to criticise it; but we may not criticise the man for holding his opinion. And after he has made his opinion public it is no longer his—that is, it is no longer his *property*, however much it may be still his opinion. And when the opinion is criticised, he must not regard *himself* as criticised. He may have promulgated it in a public meeting, or through the periodical literature, and while we give it the criticism we regard as appropriate, he has no more right to complain than if we were criticising "The Proverbs of Solomon, the Son of David, King of Israel."

We have tried to conduct all our criticisms on the principle as above set forth; and we have criticised the opinions of our friends as closely as we would have criticised those of our foes. But for lack of the latter, we have been tied down to the opinions of friends, and all our criticisms have been friendly; and we have never been annoyed by criticism of our own opinions or conduct.

A CASE IN PRACTICE.

BY GEORGE W. KEELY, D.D.S., OXFORD, O.

THE case here illustrated is of a young Kentuckian aged fourteen years and six months, a little over six feet in height and well proportioned. His father reaches up towards the clouds—*six feet and six inches*—straight as an arrow, and a perfect specimen of manhood. The young man had unusually well developed arches, and strong, firm, well developed teeth, not the slightest decay appeared in any of them. So far as I could learn no irregularity had ever before appeared in the family of either of the parents. It can be seen by Fig. 1 that the left superior lateral

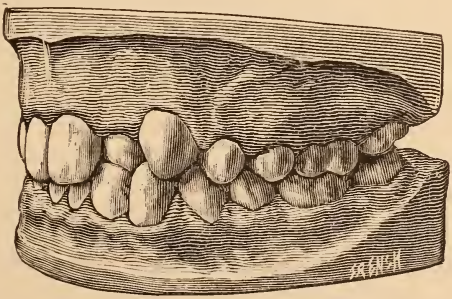

FIG. 1.

is locked inside the inferior teeth fully half the length of its crown, and as the patient had rather a short upper lip, the deformity was very marked, and it affected his enunciation to a considerable extent. This he did not fully realize until after the tooth was moved into line.

The mal-position of this tooth, was doubtless caused by the retention of the temporary lateral incisor, which gave the permanent one an inward incline, which is a very prolific cause of the superior incisors being caught inside the inferior ones. It is very simple and easy to prevent this, *provided* the cause is removed before the incoming permanent teeth are caught, by directing the child to press them out frequently with the thumb, or the use of a stick, or lead pencil, as an incline plane, and they will frequently take their normal position without any assistance. If patients would consult their dentists often during this important period, there would be but few if any cases of this kind of irregularity. A single ounce of prevention is far better than a ton of cure. In a former illustrated article in the JOURNAL we presented the case of a lady aged forty years, with the left superior cuspid caught inside the inferior teeth just as in this case. She was teaching in one of our schools. The apparatus in that case was made of vulcanite covering the roof of the mouth, and clasped to molars on each side where there was an opening. As the tooth was moved out by the jack screw (the most powerful and indispensable instrument for moving teeth), the antagonism of the teeth was destroyed, until the offending cuspid was in its normal position. Fourteen days were consumed in this case. But for her occupation, an apparatus as here illustrated, would have been used.

In this case we took an impression with modeling compound leaving it in the mouth a sufficient time to prevent the teeth drawing on its removal. The *model* must be made with care, so the teeth are all perfect. Then the trial plate is fitted to the roof of the mouth, and *over the posterior teeth* (all of them), and the bite taken, raising the teeth apart so the offending lateral can be moved into place, and at the same time the patient has a grinding surface in the plate for the purposes of mastication, and it will also prevent the teeth elongating in case of a protracted operation. In Fig. 2 this apparatus is shown. It can be seen that

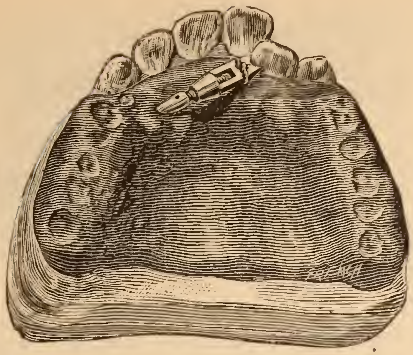

FIG. 2.

both the central and cuspid are resting on the lateral. On the right side the plate is made thick to receive the end of the screw, a small hole being drilled for that purpose. The point of screw placed as seen in the cut, to move it out of the lock in the easiest possible way, and also to give it a slight turn in its socket. The point of a small broken drill was used to operate the screw. When the apparatus was properly adjusted, and the screw in place and tied with a thread to the plate as seen near the refractory tooth (this is done to prevent the loss of the screw as it is not a digestible substance), the screw is tightened two or three times a day, every time the patient insisting on vigorous work. The apparatus was removed every day and cleansed, and the patient was required to give his teeth a thorough brushing. He was plucky, and our gentle disposition was disposed to be accommodating, so long as there was no inflammation present. As the tooth moved to its normal position it disturbed, to some extent, both the central and cuspid. At the end of the *ninth day* it was in place, and the apparatus was removed, and a retaining plate inserted and worn about ten days. In this case a retaining plate was not absolutely necessary, and was inserted only to hold it until the central and cuspid would fall back into place. During this operation there was no inflammation present, and the patient made no serious complaints, only it was uncomfortable to have his mouth bridled in that way. During the operation he attended his recitations regularly at the university.

Fig. 3 shows the result. The most indifferent observer can see the improvement in the case. The jack screw has the "Sampson" power in moving teeth. By its use we apply strong

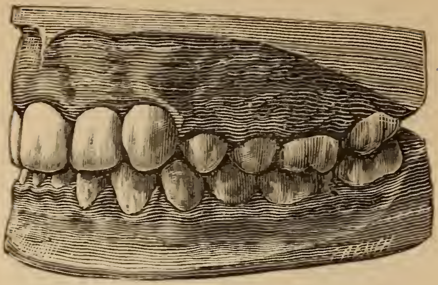

FIG. 3.

force, and then, if necessary, have absolute rest. It is greatly superior to the rubber ligature, for by its use we do not have constant work and there is less danger of producing inflammation. "When force is applied in moving a tooth, it is a process of absorption on the one side and an ossific deposit on the other, a carrying off in the circulation of waste material before the moving tooth, and the closing up of the place left by new material. The processes of nature kindly come to our assistance in repairing the waste places made by moving the teeth."

It is always best to make haste slowly, and when excessive pressure causes pain, nature admonishes us to call a halt and give the parts *absolute rest* for a time. If we fail to be admonished by the presence of severe pain, and do not heed the warning, the death and consequent loss of the tooth may be the inevitable result.

Correspondence.

"I charge you that this epistle be read."

"AN INTERESTING CASE IN PRACTICE."

EDITOR JOURNAL:—The case decribed by Dr. Haskell in the December number of the JOURNAL, is in most respects an unusual one, and any attempt to explain it will, as you suggest, prove baffling.

If we could fully realize the influence of the mental emotions upon the animal economy, their effects, sometimes, in changing the healthy conditions to serious morbid affections, perhaps some of the phenomena presented in this case might be accounted for.

A writer in a late number of *Science* gives the following as a simple series of phenomena, with which to illustrate the interaction of the mind upon the body. "If you fix your mind upon one of your fingers and look at it steadily for five minutes you become conscious of sensations in that finger, which were previously unnoticed. If the finger happens to be cut, the pain will become more acute and it may begin to bleed. If it does bleed, you may feel alarmed, you will breathe more rapidly, your heart may palpitate, your face may turn pale, you may even faint away."

It is now believed by some physiologists, that every part of the body is connected, by nerve fibers, with a corresponding portion of the brain,—a central localization, so to speak—and that every change from health to disease in any organ is communicated to that part of the brain which presides over the particular organ or function in which these changes occur and conversly, when changes are set up in the brain area the effects are observed in the corresponding organ.

Dr. Haskell's patient is a physician—he is suffering with dyspepsia—his intimate knowledge of the function of digestion makes him keenly alive to the importance of thorough mastication of food. The feeling of discomfort to which he is subject, by reason of indigestion, is constantly associated in his mind with his artificial teeth and any irritation of the mucous membrane, which under ordinary conditions of health would not be noticed, is exaggerated until it corresponds to the expectant state of his mind.

When at home he applies, of course, to his dentist for relief. When in Dakota, spending his time out of doors and comparatively free from dyspepsia, "he doesn't know that he has artificial teeth." Presumably there is little, if any, difference in the degree of irritation caused by wearing the plates, whether in Chicago or Dakota. Might we not therefore conclude that this is a case in which the dentist would be justified in practicing the art of the "mind curer" in connection with his own. This school, we are told effects cures of diseases, that are purely functional in their nature, by strongly impressing on the more passive mind of the patient, that there is nothing the matter. Why then may we not adopt the "mind curer's" methods in these extreme cases we are considering?

The late Dr. B. D. Wheeler, of this city, related a case in his practice to me, which may serve in some degree to illustrate the interaction of the mind upon the body, to which I have alluded. He made for a business man a full artificial denture, but for some reason, it could not be used in mastication. The doctor, without knowing just why, made a second set with no better result. The patient worried along with the teeth until the time came for him to take his usual summer vacation. A fortnight after he had established himself at the sea-side, a dispatch came stating that his iron safe at home had been broken open and a large sum in securities stolen. Hastily he took the first train for Cincinnati and on arrival found that his loss was trifling. He also discovered that he had been using his artificial teeth in masticating the hasty railroad luncheons en-route. His mind was so intent upon his ducats, that he had actually lost all consciousness of his teeth. The patient returned to the sea-side where he received the physiological rest that both body and mind needed, and ever after the artificial teeth proved eminently satisfactory. The doctor's concluding remark was: "I never could understand it."

Your space is too valuable for me to tell, excepting in a brief way, of one of our German citizens who committed suicide—it was said—because he could not use his artificial teeth. The very intelligent medical gentleman, the coroner, I presume reasoned somewhat in this way. The man could not masticate his food, therefore he must have suffered from indigestion. Besides producing a feeling of discomfort in the stomach, indigestion causes one to look on the dark side of things and melancholy may result. Great dejection of spirits frequently leads to self destruction. Ergo, the man committed suicide for the reason that he could not use his artificial teeth!

One other curious case. I knew a man who had had eleven or twelve full dentures made by nearly as many different dentists, without being able, as he stated, to wear any of them comfortably. With all he had no thought of suicide, on the contrary he was as jolly a person as one would meet in many a day. He came to a strange end however. He was found dead in his chair, with head thrown back and one of the upper sets of teeth, perhaps number thirteen by this time, lodged in the pharynx. Here another instance was reported of death caused by "swallowing artificial teeth"—most likely it was a case of appoplexy.

CINCINNATI, O. H. A. SMITH.

"EFFECTS OF AMALGAM FILLINGS UPON THE SYSTEM."

Editor Journal:—The above is the subject of a paper by Dr. Bogue of New York, found in the January number of the *Odontological Journal*, wherein he essays to criticise without disproving articles in a paper written by me several years since upon a similar question. Had he understood the manner that many of the experiments with the guinea pig and roaches had been conducted, he could hardly have said "That Dr. Talbot fails to realize the difference between amalgams placed and kept continually in a hot and dry position, and amalgams kept most of the time wet by saliva." A part of the experiments, numbering in all about ninety, the amalgams were kept wet with saliva constantly, and the creatures manifested all the symptoms of mineral poisoning and finally died.

Dr. Bogue states as a fact—"that amalgams well made will not part with their mercury under about 400 degrees." Can he prove it? I care not whether "a sufficient portion of the material be rubbed in the hands and placed in the tooth," or "the constituent parts are carefully weighed and the proper proportions preserved," or whether there be little or much mercury in the amalgam; an old or new filling, or whether the temperature be high or low, *if there is mercury in a filling, there will be a vapor of mercury given off.* Since the discovery of this fact with the experiments proving it, several scientific dentists have experimented with like conclusions.

Dr. Bogue mentions the case of a patient who took two ounces of mercury through a tube, into the stomach, and after its discharge recovered. It is not unusual for large doses to be prescribed, and the English ladies of a century ago, who took a teaspoonful of mercury when they desired to appear brilliant, are not recorded as dying from its effects. Mercury in its natural state passes through the alimentary canal without being absorbed, but when rubbed up with an excipient. it is separated into minute globules and absorbed in proportion to the size of the globules. The more minute they are, the more readily absorbed and effectual the results, hence the disastrous effects of vapor of mercury.

I present to you the case of a young woman 33 years of age, Miss S——, of Lake Forest, Ill. When she first came to my office fifteen years ago, I found a few amalgam fillings in her teeth and filled several posterior teeth with amalgam. For several years she had been treated by her physician for sore throat. She consulted me in 1884, in regard to her teeth, and I then noticed the usual symptoms of mercurial poisoning; the red line along the gum was very marked, and the flow of saliva excessive. I gave her my opinion of the case and told her I thought the sore throat was produced from the same cause, and suggested that the amalgam fillings be replaced by gold; which I commenced doing October 27th and finishing November 22d, 1884. From that time her throat began to be better, and she gradually improved until when I met her this winter she was free from all ailments, and better than she had been for years.

E. S. TALBOT.

CHICAGO.

Compilations.

"Gather up the Fragments."

THE ÆSTHETIC APPLICATION OF DENTAL ART.

BY W. AUSTIN CURRIE, D.D.S., CAMBRIDGEPORT, MASS.,
INSTRUCTOR IN CARVING AND PLASTIC MANIPULATION, BOSTON DENTAL COLLEGE.

[Read before the Alumni Association of the Boston Dental College, Boston, October 13, 1885.]

ON different occasions during my period of practice, I have been requested by patients to explain why it is that dentists seem to know so little about art. What can I say more than to confess that I do not know? I have found repeatedly that such a reply does not in any sense afford satisfaction to the inquirer, or tend to extricate me from an embarrassing position, but only serves to push me more deeply into difficulties.

The query in the outset was prompted, probably, by a passing thought, and had they received any convincing reply, their momentary inquisitiveness would have been gratified and the subject dropped then and there.

But, perceiving my inability to give any reason why a profession so entirely made up of artistic requirements, should have no facilities for cultivating an æsthetic taste in the dental colleges, their curiosity naturally became aroused, and I regretted that I allowed them to see that the question was too much for me.

And can we wonder greatly that such questions meet us, when we reflect that one of the two greater branches of dentistry consists entirely in restoring nature by art?

What is Art? Of all the short words in our language there are but few which are handled more frequently, and that, too, by persons who really have but a faint idea of what those three letters signify. How many of the thousands of sight-seers who visit the galleries of our own and foreign countries, and are thus permitted to look upon the work of celebrated artists, comprehend that the creations before them are the result of the careful study of a lifetime. They are conscious only of the general effect of a work of art, and do not realize what a vast amount of study and labor is required to attain such grand results.

For the sake of illustration, let us for an instant glance at a painting. The artist has presented his work true to life; almost too much so to be pleasant. It has been truly said, that, next to the actual pain experienced in being a party to sorrow is the touching suggestion which a faithful picture communicates.

Wandering over the canvas, our eye first notes the general interest; we remark the excellency of the drawing, the perspective, and the coloring, but soon our attention becomes riveted on the central object, a representation of an old woman, a glance at whose face at once proclaims the *special* motive of the work. The scene is a court of justice, with all of its characteristic stiffness and its unpleasant suggestiveness. Spectators are there with faces full of feeling. The learned lawyers, in powdered wigs, are there true to life, while, in contrast, stands this poorly-dressed woman before the judge who is about to pass sentence of death upon an only son. She is offering a mute appeal—no words of supplication; but the trembling arms and old withered hands outstretched, tears flowing over wrinkled cheeks, the intense agony so plainly depicted on every feature, is an appeal more touching than any eloquence the tongue could have offered. Such a picture commands the attention of every beholder; but how few realize what an immense amount of work it required to reach such a mark of perfection! What an insight into human nature was called for to enable the artist to portray this touching scene! Do they reflect upon the fact that a knowledge of anatomy, physiology, and other studies is required, as well as of colors and their application? Many persons have a faculty of painting a fair representation of the human face upon canvas—they are said to be talented in that respect. But if they expect to approach anywhere in the vicinity of perfection they must be acquainted with the forms of the bones of the head, as well as the muscles and softer tissues. How can they truthfully give the form of the outside without some knowledge of the framework within?

Now, if this knowledge is indispensable to an artist, why should it not be equally desirable that the mechanical dentist should be conversant with its principles also?

An artist, by making himself intimately acquainted with the human form, and by his perceptiveness, power of imitation, and deftness of hand, can place a representation of it upon canvas. He can counterfeit any feature and bring forward any expression. If his work be sculpture, he does away with deception by placing actual shape before us. The one deceives the eye by light and shade, the other gives us substance, the natural light contributing the appearance by which we distinguish the different forms of objects. With the dentist, the object is the same; but, unlike the former, he has not blank canvas or hard stone to work upon, but has living tissue, on which he can learn to put different expressions. Many will say that expression comes from the mind, and that we have no control over it except in our own features. True, it comes from the mind, but it shows itself upon the face, and different expressions are but the result of the action of different muscles in moving portions of the skin (and underlying tissues) so that a new light strikes upon it; this varying light, with its consequent shade, adds a new aspect to the countenance.

An artist can change the whole expression of a painted face by the addition of a little extra light and shade, and that with but a few strokes of the brush. All he does is to *apparently* raise some portions with light and cause others to recede by rendering them a little darker. If colors will change the countenance by appearing to raise portions, is it not patent that *actually* raising those parts will do it even better. It takes but the slightest change in position of the lips and adjacent parts to make a great change in expression. You will put greater faith in this assertion if you will experiment a little yourselves.

Take a portrait, or better, two, precisely alike. The lithographs such as are exhibited in the street-windows by theatres will answer every purpose. It will be best if we choose a lady's face, as it is with the lady's features, principally, that we will wish to utilize our knowledge, if it be found worthy of use. It is, we will say, full face, and one with a pleasant look about the features. Now with a crayon make a short downward mark from each corner of the mouth on one picture only, as we will need the other for comparison; then with your finger-end rub in a little white just under the lower lip, adding a trace of shade to the upper lip in the same manner. What is the result? You have a face the owner of which you would think had not an earthly friend. Now, after erasing what you have added, reverse the order of things by placing the light on the upper, the shade on the lower, and drawing your lines upward from angle of mouth, instead of down, as before, and you will find the result reversed also: for the face is found now to be bright and cheerful. By going a little further, and placing two curved lines from base of nose downward, past corners of mouth, with convexity outward, you have a grin that will often prove contagious. A thin piece of paper placed under the lip on the alveolar ridge will add its quota to the expression.

These changes have been effected by a few marks that would be hardly noticeable anywhere else on the drawing, unless about the eyes. If this can be done on paper, can it not be accomplished, say in part, at least, with the face itself? Of course, it is an entirely different matter when we come to put our theory into practice, as it will require that we educate the eye by long and close observation of nature, and teach the hands to follow its dictates.

The lips, of all the features, are the most direct index to the feelings, and the expression characteristic of every face is due almost entirely to the effect of light and shade about the lips. It is (I believe) because we forget this fact, that we often feel dissatisfied with our work even when the patient expresses pleasure with it. I believe, too, that it is owing to the fact that the profession shows want of knowledge, care, or ability in this respect that we meet with so many faces whose owners wear dentures that are blank, or almost expressionless about the mouth. When we hear such common expressions as a beautiful smile, or eloquent lips, do we ever ask ourselves in what does this beauty or that eloquence consist?

Our course of studies in mechanics is, to the best of my knowledge, perfect as far as it goes; but is it carried out to its greatest extent? For instance, we are told to carefully note the play of the lips over the wax articulation; but *what is it* in the play of the features that we are to study? I can but answer for myself. I was expecting to hear *expression* treated in every detail, and felt disappointed when upon nearing a situation where I felt genuine interest, I found that the points which seemed to me of the utmost importance were passed over with a casual remark or two.

I know when I say this that no one will infer that I am trying to pit my limited knowledge and inexperience against years of practical work of my instructors. Perhaps our teachers expected we students to understand without further instruction. Perhaps my classmates, by superior ability, were enabled to bridge over what seemed to me a break in the most interesting part of our course, or it may be that I am expecting too much of dentistry.

Now, the question is, how to proceed in order to derive any professional benefit from the ideas here suggested. As I regard it, the first requisite is to study nature, and study closely. As far as the human countenance is concerned, no one has more opportunity for observation than the dentist. Our business carries with it a certain license, so that we can examine a patient's features critically without giving offence. Unlimited chances are thus offered, and we can watch every face that we work over, and then we must analyze what we see.

Note the general expression, the fullness of the lips, and the tooth development beneath them. Watch where and how the light strikes the face, and what is the result of different lights upon the same features. If any teeth are absent, note the effect upon the expression. Observe color of hair, eyes, and complexion, and then examine the exact shade of the teeth, also the size and shape of the teeth as compared with size and shape of features, form of head, and general build of body. This can be done by a trained eye, while the patient undergoes the usual examination, without suspecting but that your undivided attention is given to the teeth. Then compare this with the next face that presents itself. If this is to afford any benefit to the practitioner, the observation and comparison must be critical. We are too apt to bestow a casual glance, and forget as soon as the patient is gone, whereas we should memorize or make a note of the most important points.

To make ourselves *masters* of the art of light and shade, we must go even farther than this. *We must cultivate a taste for art.* We subscribe for some one or perhaps all of the dental journals—why not for an art journal as well? We try to keep ourselves posted on all the new ideas in our profession—why not mix up a little art with them?

Suppose that we cannot see at first that it is benefitting our work, we cannot deny that it is refining, as well as affording a pleasant change from an occupation that is in many respects disagreeable. Then when we have leisure we can turn our hands to a little modelling.

If we have a small space in our laboratories, why not utilize it by making a bench in a corner that has a good light, and then investing in a few pounds of artists' clay and one or two modelling tools. By an hour's work and the outlay of a few dollars, we have a way of passing our spare moments that will be novel and instructive. For it is in modelling and casting that the effect of light and shade is made most manifest. If we have doubts of our ability to reap any benefit from modelling, why not try casting, choosing a friend or a patient's face for a subject? Suppose that we try it in this way, our subject being a person who wears a full denture and with a bare face? First make a mould of the face (wax will answer) with the mouth empty. Then one with the plates in position, and then, after building up with wax in different places on the plates, place them in the mouth and make a third mould. Now to cast with plaster. The wax mould will of necessity be thin, so that it is best before casting to build up around the outside of the mould with sand, so that the weight of the plaster, when soft, will not change the shape. Then if you will tint the water with powdered or dry umber and a little vermillion before you mix the plaster, the latter will more nearly resemble the flesh-color. After casting all three, and allowing the plaster to set, if you will remove the wax from each you will be surprised at the entirely different expression on each face. The question is as to where you will find a person who will submit to so much trifling? I have experimented with many different faces, and thus far they have been so deeply interested in the novelty of the work that I have yet to meet the first complaint. In conclusion, let me say that I believe that if our dental brethren who have never tried this, would do so, they would be surprised and pleased with its effect upon their laboratory work. At first, I became discouraged, and thought that I failed more often than I succeeded; but now, when I look back I find that I have not failed. On the contrary, I have succeeded so far that now I am where I can see what can be accomplished if one is persevering. I am convinced that the study of facial expression has helped me wonderfully, and has given a new impetus to work that before seemed monotonous. One thing in which I think all will agree with me is this: that a little art cannot injure us in any way, even if it is æsthetic.—*Medical Record.*

EDUCATION.

The objection to the old-time courses of study in our colleges, like the objection to most set courses of reading is that they assume a knowledge of certain subjects to be essential to all persons desirous of obtaining an education. Doubtless a knowledge of some subjects is, and these we may denominate elementary, though we do not mean primary alone; but with the widening of the field and the constant enlargement of the horizon, we hold that the courses of instruction in different departments of study should begin to diverge at a point nearer the beginnings of knowledge, and that often much time is wasted in the acquisition of things which have no bearing upon the life work of the individual. And this fact, for I will assume it to be such, is coming to be recognized by instructors more and more, and the general adoption of better educational systems is chiefly hindered by a too conservative clinging to certain antiquated notions as to what *ought* to constitute an education. The study of dead languages, for instance, which is doubtless necessary to open to us great mines of wealth in certain directions, is not essential to those who expect to dig for treasures of another kind. Emerson, though a good classical scholar, preferred always to read translations of the Greek and Latin authors, and one must devote a life-time almost to the study of these languages to be able to read them critically or even profitably. We hear much nonsense talked about the satisfaction to be derived from reading the original texts by those who possess the usual smattering only of these languages, and all this on the part of such is sheer affectation. In one sense, of course, all knowledge is valuable, but this value is relative; and since but a comparatively small amount of the sum total can be acquired by any one person, each student should seek that which he is by nature best fitted to acquire, and which will be of most real service to him. Knowledge is but a means to an end, else would a learned man be no better than a cyclopædia. To be learned is not necessarily to be educated in the truest sense, and to be educated does not of necessity make life valuable to one's self or to the world. A man may be a miser though poor in this world's goods, for of what value is the most profound knowledge if it be not used aright—if it be not put out to usury, that it may increase the intellectual or material wealth of the world. If we but absorb that which others also know—if we add nothing, give out nothing, and turn our knowledge to no practical ends, we are but cumberers of the ground, and the world is no better that we have lived in it.—Dr. W. Tucker in *Albany Medical Annals.*

PREVENTION OF BAD TEETH.

A foreign exchange says the troubles which arise from disease of the teeth, or from their loss, are not always directly referable to their cause. When actual toothache is present there is of course little doubt, and the remedy of extraction at once presents itself. At the same time it must be remembered that the forceps does not undo the work of disease or make amends for its ravages. A jaw which has lost the best part of its function with its teeth, or which bites unequally with the scattered survivors of its former armament, is but a deceitful guardian of the passage to the stomach; while it seems to do duty in mastication, it passes intact much that is unfit for the immediate action of the gastric juice.

Were the relationship between bad teeth and dyspepsia, with its consequent discomforts, better understood, we should probably hear less of the prevalence of dental caries. Greater attention would then be paid to the small organs whose obscure influence on the general health so fully justifies their preservation.

Specific constitutional disease, drugs, and other special factors no doubt account for a certain amount of dental decay. Neglect, however, accounts for much more. Want of care in choosing food, and particularly in cleansing the teeth, has nearly everything to do with the dental worries of a great many people. A point well worthy of note in this connection is that most of the permanent set of teeth come into active operation during childhood or early youth. It is hardly to be expected that children, if let alone, will pay much attention to the state of their mouths, unless driven to notice an aching stump. Thus it happens that most children have lost one or several teeth before they are well in their teens. Here, then, there is need for parental supervision.

Mr. W. M. Fisher, of Dundee, has been led by certain observations, which proved the defective condition of the teeth in a majority of school children, to suggest that some regular system of supervision by a dentist be adopted as a part of school management. The expenses he would have defrayed by the parents, or, should they be too poor, by the State, out of the education grant. This plan has actually been adopted in the parochial school at Anerly, in Surrey.

We have long been of opinion that it would be most desirable if the health of all schools could by some plan be periodically passed under review by a medical inspector. The possible obstacle to such an arrangement would be the expense. This may not prove insuperable, and if it do not, we may hope that this method, and also some plan of dental supervision, may find their place among the recognized forms of school discipline.—*Medical and Surgical Reporter.*

Iron for the Blood.—Mike (something of an invalid): "The docther says Oi must dhrink oirun for me blood."

Mary: "Shure, an' how can yez dhrink oirun, Moike?"

Mike: "By meltin' it, av coorse."

Mary: "But yez can't dhrink hot melted oirun, ye fule."

Mike: "Oi knaw Oi can't dhrink hot melted oirun, but it's meself that can wait till it cools."—*Medical Record.*

Editor's Specials.

"Write the Vision and make it plain."

MISSISSIPPI VALLEY ASSOCIATION.

Of Dental Surgeons, of course, understood; but the full name is quite too long for convenience.

But before the reader sees this number of the Journal, the old society will hold a meeting. This was not the first dental society in the world, but since the *sine die* adjournment of the American Dental Society in 1856, it has stood first on the list as the oldest. In many respects it may be regarded as the *mother* society. In the main its modes of procedure are copied by other and younger societies. Its members widely diffused, have been actively instrumental in the formation of local and state societies, and of course have carried their habits and training into the new organizations. Nothing is plainer to the older professional brethren who can remember the character of the original American Society, than that it was not, to any extent, copied by the Miss. Valley Asso. We came into the dental ranks too late to see much of the doings of the first society, as it held but three meetings after the event referred to, and we found it impossible, under the circumstances then existing, to attend the first of these. So we saw only its last two meetings, at one of which, in the most dignified manner, it discussed the best and most graceful mode of dying, while at the other it gracefully folded up and laid aside the mantle of life, being able to draw its last breath, by the power of a bare quorum of members present.

It looks like a singular coincidence that when we first saw the good old Miss. Valley Asso., the members were discussing, on the second day of that session, a report of a special committee recommending a dissolution of the Association by a *sine die* adjournment. The special committee was composed of Drs. W. H. Goddard, of Louisville, Ky., and A. M. Hunt, of Indianapolis, both solid and influential members, but both discouraged. As intimated above, we have often thought it strange that at our first acquaintance with them, the two only dental societies in existence had about concluded that associated effort was a failure, as far as dentists are concerned. At the M. V. A., Dr. A. M. Leslie very earnestly opposed the adoption of the committee's report; and finding two members of the profession present as visitors who were young and hopeful, and who, he ascertained, were wishing the Association to continue; and being chairman of the committee on membership, he asked that the regular order be suspended to hear the report of a standing committee, and then he reported these visitors as candidates for membership, and they were duly elected. This gave a fresh impulse, and soon after, the committee asked leave to withdraw the report, and the good old MRS. SIPP resumed business. One of the new members was the lamented J. G. Hamill, then of Georgetown, Ky., but later of Lancaster, Ohio, and the other is now taxing the time of the readers of the JOURNAL.

From this date the association awakened into renewed life and activity; and it would be difficult to estimate the good that has been done by it through all the years of its existence since the day of its discouragement above referred to. It is well known to the older dentists that the association started the *Dental Register*, and carried it till it was thought to be able to run alone. As soon as it was supposed that it would meet its own expenses, it was transferred to Dr. James Taylor, of Cincinnati; and relieved from the burdens of its publication, the association resolved to spend a portion of its accumulating funds in the way of prizes for methods and devices for the promotion of progress in dental science and art. Accordingly, a prize of one hundred dollars was offered for an essay on Dental Surgery, adapted to popular reading, and a prize of fifty dollars for the best set of extracting instruments.

These measures resulted in great good. The essay was stereotyped and issued in a cheap form, so that dentists could afford to distribute it among their patrons, and some members of the association thus sent them forth by hundreds, and a few by even thousands, and the uniform testimony was an observable increase in intelligence in reference to the care of the teeth, especially those of children, and with the increased intelligence came, as an evident result, increased patronage of the dentists, who distributed the information, so that the benefits conferred have proved as lasting as time, and will endure till heredity ceases to be a force in Nature.

And the prize extracting instruments, made by Mr. Sherwood, served as a pattern for other instrument makers, and a guide to dentists, especially to the younger ones, in the selection of instruments with which to perform the most painful operations known to surgery. Any who saw these forceps and elevators could not regard it as professional to extract teeth with tongs, or roll them out endwise with barbarous (or barberous) canthooks, and consequently this operation to a good extent, was shorn of its terrors.

The worthy old association, perhaps, did as much good by stimulating thought and inciting to effort as by any other means. Adhesive foil had not been discussed or understood, till brought out in this association by Dr. A. M. Leslie ; and even he failed to see the principle of cohesion in the fullness of its possibilities, in the use of gold for filling, for he taught that as adhesive foil lost its adhesiveness by exposure and time, so a filling made by welding the gold under pressure would disintegrate also by time and exposure, and that, therefore, such fillings were wholly unreliable. But he lived to learn that readiness to cohere and actual cohesion are not identical. Red hot iron possesses the property of welding, and loses it by reduction of temperature, but no reduction of temperature will cause two pieces already welded to separate.

Older brethren, too, will remember that nearly all medicinal agents in use by dentists, at the time and after the formation of the association, were used empirically. That is, there was little if any clear thought as to their action in curing, till the matter was brought up in the association by a program for discussion. This called out investigation as to the pathology of sensitive dentine, and the *modus operandi* of creosote, nitrate of silver, tannin, chloride of zinc, etc., and in less than two years, more light was gained in this time than in all time previous.

But it would be impossible, even if time and space would permit, to detail a tithe of the good things now enjoyed by the profession, for which they are, directly or indirectly, indebted to this Association. And this paper is long enough.

We hope to see a revival of interest in reference to this mother society. Exhausted by prolonged cold weather, it has been our misfortune to miss its meetings lately. Nothing but physical disability ever kept us away ; and we wish all the older members were equally zealous.

THE STATUS OF THE MEDICAL PROFESSION.

An editorial in the medical department of the *Cincinnati Medical and Dental Journal*, on page 144 of the February number, entitled "Medical Ethics in Cincinnati," gives some startling facts as to the professional standing of physicians in Hamilton County. We feel like laying it before our readers, inasmuch as recognition by the medical profession seems to trouble the minds of many of our best friends among our dental brethren. The article is as follows:

MEDICAL ETHICS IN CINCINNATI.

"The question of consulting with irregulars has again been brought before the profession of Cincinnati. Dr. C. P. Judkins was called in consultation by a physician who had formerly lectured in the Ohio and Miami Medical Colleges, and had been President of the Academy of Medicine. This gentleman took Dr. Judkins into his office and frankly told him that he might be held accountable for consulting with him, as he had violated the code, in that he had a patent medicine. Dr. Judkins was much shocked to hear of this gentleman's downfall, as he had always held him in high esteem.

For the purpose of getting the matter before the profession at large, so that physicians may know with whom to consult, Dr. Judkins moved that a committee be appointed by the Cincinnati Medical Society to meet a like committee from the Academy of Medicine for the purpose of devising means to this end. The committees were appointed, and reported a list of one hundred and seventy-nine names of practicing physicians in Hamilton County with whom it would be safe to consult. Now, as there are over five hundred physicians in Cincinnati alone, the report created no little sensation. The committee explained that these were the only gentlemen that were eligible to membership in the State Medical Society or in the American Medical Association, consequently they were the only ones they could recommend. Of course, the names reported were only those of the members of the different local societies, viz: Academy of Medicine, 134;

Cincinnati Medical Society, 54; Walnut Hills Medical Society, 12,—or a total of 200 names, with 12 duplicate names. The committee were not willing to undertake the ethical standing of gentlemen not connected with any society.

The two medical societies were unable to add anything to the report of the committees, and whether the Code question will now be suffered to drop remains to be seen."

If the medical profession is such an uncertain mixture, does it seem so very important for dentists to have medical recognition? And bear in mind that these physicians, not of the elect two hundred, are not irregulars, and what are generally recognized as quacks; but very many, if not a majority of those not included in the report, are educated men, who have received, and now hold diplimas from regular medical colleges. "If they do these things in a green tree, what shall be done in the dry?"

It was, perhaps, proper and judicious for the committee to decline the responsibility of deciding the ethical standing of any; hence they simply report those who belong to regularly organized societies, inasmuch as each society is responsible for the characters of its members. No doubt many of those not included in the report are eligible to membership in any of the local societies mentioned in the report; but the fact that they have not availed themselves of membership privileges and standing, tells against them in this report.

But the bare statement that, of the five hundred physicians of Cincinnati, and the hundreds more distributed over the county, only two hundred are eligible for consultation, is startling, if not humiliating. If such is the state of the medical profession the country over, a section on Dental and Oral Surgery is not likely to damage the character of the International *Medical* Congress.

It can not be concealed that there is a feeling of restiveness in the medical profession, in reference to the restrictions of the Code. A disposition to overstep is manifest, and the result will probably be some modifications of the Code itself. It has long been our opinion that it is too rigid, or too rigidly interpreted, in reference to advertising. A young physician ought to be allowed to announce himself, in a proper manner, as extensively as he sees fit. With present interpretations, the physician is almost superannuated by the time he becomes known to the public. But those already established in good practice control this matter, as they are in the majority; and their restrictions on the young show almost as much forethought as is shown by the paternal squirrels in their treatment of their young brethren while still in the nest. Both cases result in the *practice* being retained by the older members.

And if a young physician wishes to give special attention to a certain class of diseases, he should be allowed to announce the fact in a proper and becoming manner. Once we heard an oculist and aurist say to a dentist who had a small sign beside his door, which said "Nitrous Oxide," the medical profession would not tolerate such a thing as this, pointing to the small sign. But it does, said the dentist, as beside your door across the street, they tolerate "Oculist and Aurist," and elect you to office in their society. Are the signs alike in nature? said the oculist. No, said the dentist, or mine would read Gassist and Pullist. The oculist crossed the street and threw his sign into the gutter, and the dentist gave his similar treatment. But all this is folly. Our patrons seek us on account of their infirmities. We should not compel them to advertise these by inquiries of wayfarers and policemen for our offices. On the contrary, a man's office should be designated by his name and business, so that the afflicted can readily find him. Their embarrassments are already sufficiently heavy, without the addition of a bewildering search for a place of relief.

And proper announcement of our place and business is required even by modesty. The opposite course says, by action, "Others may need advertising cards and signs. *I* am not such a one. *My* reputation is so great that people will search *me* out. They must have *me*. Hence *I* need neither card nor sign."

CORRECTION AND EXPLANATION.

In a former number we called attention to something of a mistake in the report of our remarks on a certain subject at the State Society meeting at Chillicothe, which was made by the reporter of the *Cincinnati Medical and Dental Journal*. Dr. Sage, the editor, who was also the reporter, promptly makes a correction and gives an explanation of how the mistake occurred. We are pleased with this and with his promise for the future. His correction is on page 157 of his *Journal* and is as follows:

A CORRECTION.

In the January number of the OHIO STATE JOURNAL OF DENTAL SCIENCE, our attention is called to the fact that our report of Dr. Watt's remarks at the late meeting of the State Society, made him say that he had shown by the experiment of submerging a bright bar of steel in a jar of *water* that it would not rust during an entire season, etc. Reference to our short-hand notes shows that we wrote the outline for *oxygen*, instead of *water*, and that the mistake was in transcribing.

In making an abstract, there is danger often of changing entirely the sense of a speaker's remarks, by too hastily concluding that he meant something that a verbatim transcription would show at once he did not mean. An error so patent on its face ought not to have crept in. Possibly the reporter's mental faculties were "polarized." He recalls having studied on that very evening Bridgman's experiment with a bar of zinc immersed in a bath of diluted sulphuric acid, illustrating his theory of galvanic action in the mouth.

Dr. Watt has our promise to be more careful on all the occasions we hope to enjoy hereafter of reporting his remarks. We always try to be particularly alert when a speaker who has something to say, and knows how to say it, takes the floor.

A few remarks on the difficulty reporters encounter may not be without interest to many of our readers who may feel that they have suffered at their hands. Many speakers who have the faculty of expressing their ideas clearly, yet fail to discover in a printed report a full and exact presentation of what they suppose they said. In a five or ten minutes' speech, a speaker, who is full of his subject, is in danger of neglecting a full elaboration of certain points, which, in his more critical moods (after he has seen his words in print), he wishes he had dwelt upon with more exactness. The reporter, hesitating to take the liberty, declines to supply what he thinks the reader ought to infer the speaker would have added, had time permitted. The speech that appears to best advantage in print comes from the man who, while perhaps ranging over a wide field, is particular to "beat the bushes" thoroughly, as he goes along. Still, it cannot be denied that the deficiency is often entirely on the side of the reporter, who, with such limited practice as he gets in two or three yearly conventions, can hardly be expected to be perfect. The magnitude and the difficulty of undertaking to report faithfully all that is said in the course of two or three daily sessions of three hours each, only those who have tried it can appreciate. It is more than is expected of professional reporters. Then the loss of a word or two by the banging of a door often costs the reporter (and the speaker) dear.

We have a proposition to make. Let every one who has a speech to make supply himself beforehand with a few sheets of "manifold" paper, write out an abstract, or a full report of what he has said, and hand it to the reporters. This may be done at his convenience, before the ideas have slipped from his mind. We have never before made this suggestion publicly, but in a few instances in which the request has been complied with by individuals, the result has been eminently satisfactory to both the speaker and the reporter.

INTERNATIONAL MEDICAL CONGRESS,—NINTH MEETING.

The Section on Dental and Oral Surgery should be kept in mind by all dentists, and especially by those who have our professional interests at heart, and who are likely to possess the ability and opportunity to forward the aims of the said Congress. In another place the reader will find an official notice of the section by Professor Taft, which was crowded out of the number preceding this. We ask careful and close attention to the paper, as it is quite important. The establishment of this section is a marked event in the progress of our profession ; and its tendency is to be for good or evil, just in accordance with the action and efforts of those interested. It is claimed by many that the dentist must have a general and minute medical education. It is very evident that the average physician and general surgeon needs a much better dental education than falls to his lot under present arrangements. Belonging to and practicing both professions, we have had numerous and ample opportunities to make observations, and we could fill a large volume with details of cases, in which the lack of correct knowledge of dental and oral surgery, by physicians, has proved so prominent as to render them dangerous practitioners. More than once have we seen physicians extract the first permanent molars of their own children. under the impression that they were temporary. And we have seen where desperate operations have been performed on the maxillary bones, simply for necrosis of the alveolar process; and once we had the good fortune to prevent the removal of the inferior maxilla from the right condyle to the symphisis, on account of an alveolar abscess, resulting from a diseased root of a first permanent molar, which had been left in its socket, after the roots of the other teeth were gone. And they were not quacks, but good, and popular surgeons, that were going to operate; but they needed light on oral surgery.

These things are not written to call up invidious comparisons, but to show that while we, as dentists, need recognition and *light* from the medical profession, that profession, as well, needs similar blessings from dentists. In short, physicians and dentists need each other, and no barrier raised by ignorance or prejudice should be allowed to put itself between them.

It is not here claimed that dentists are, or need to be physicians; and certainly physicians do not need to be dentists; but the fact remains, and cannot be displaced nor gainsayed, that dental surgery is a part and parcel of medical science and art, and, therefore, it is a specialty in medicine. And medicine is not so wise, so great, so accurate, nor so good as not to need the aid and influence of each and all of its specialties. Therefore, this section in the International Medical Congress, being established, should be recognized and appreciated by our whole profession, and hence we again call attention to the short article by Professor Taft, hoping that all our readers will give it due attention.

Not able to take in such things personally, we all the more feel the necessity of urging others to do duty in this direction. It affords us unalloyed pleasure to witness proper and judicious efforts tending to professional progress. Hence to our younger, and to our stronger brethren, we say with one of old, "Fulfill ye my joy." Let us hear a good account of the section on Dental and Oral Surgery.

Dr. Samuel B. Chalfant, of San Francisco, who killed Josiah Bacon, Treasurer of the Goodyear Dental Rubber Company, and was sentenced to ten years' imprisonment, has been pardoned by Gov. Stoneman.

A LITTLE MUSEUM OF DEFORMED TEETH.

When it is taken into consideration that the teeth are the principle guide in determining species, it would naturally be expected for them to be definite and uniform in structure, form, size and texture. But, if such is found to be the case in the lower orders of animated nature, the teeth of the human race show great variations. Artificial modes of living may have something to do with irregularities in form and size, as we all recognize they have in reference to position.

These thoughts are suggested by receiving a package containing some seventeen teeth, sent for inspection by Dr. A. Gants of Ligonier, Indiana. In a long practice we have seen something similar to each specimen, except number 5. As marked, it consists of two teeth, apparently incisors, with osseous union throughout the extent of their crowns, but Dr. G. describes the specimen thus: "Six teeth were crowded between the cuspids, giving a young lady, of sixteen years, a ghastly appearance." We don't know if the remaining four had osseous union or not, but we suppose not. They may have been the normal organs, probably crowded and displaced, if not deformed, while this block, No. 5, if the term is allowable, may have borne to the mouth a supernumerary relation.

A description without cuts is not satisfactory, and yet they are hardly so much outside of professional experience, as to justify so much engraving. Probably the best place for them is a dental museum, at some one of our colleges. We will await a suggeston of that kind from Dr. G., and, of course, will dispose of them exactly as he suggests. It is not often that we see such a concentration of varied specimens.

If dentists would save interesting specimens and send them to the colleges, it would be found that students would be highly interested in them. And when interested, they are all the more ready to receive instruction. The labors of the teachers would be rendered more efficient while less fatiguing. Try it.

DISCOLORATION OF GOLD FILLINGS.

"We learn from the *Odontographic Journal* that the result of Dr. S. B. Palmer's researches into the causes of gold fillings becoming discolored seems to establish the fact that iron is the chief agent. Cabbage or other vegetables cooked in an iron pot, or water drawn from an iron tank, accounts for some cases of discoloration. Iron exhibited in combination with the mineral acids, in physicians' prescriptions, may also discolor fillings. Dr. Watt once called attention to the fact that the gold-beater's vellum may communicate foreign mineral particles to gold foil. Dr. Palmer's theory will no doubt appear more plausible to the dentist who does not believe in shouldering more than his share of responsibility."

The above is an editorial in the February number of the *Cincinnati Medical and Dental Journal.* Long ago Dr. A. M. Leslie gave it as his opinion, at a meeting of the Mississippi Valley Association, that a certain, peculiar coloring on gold fillings was due to a trace of iron in combination with the gold. Either by appointment or private agreement, it became understood that Dr. L. and the writer would give the subject special attention. We both became well convinced that Dr. L.'s theory was correct. When preparing gold for crystallization, in former years, we found it necessary to give special care to the removal of all traces of iron, or the coloring referred to would be found on gold fillings in all mouths containing cyanide of sulphur, sometimes called sulpho-cyanogen. We presume this is the same kind of discoloration spoken of above. It is due to iron.

ERRATA.

We dislike to use them, but when we must the case is decided. Owing to severe illness it was our misfortune to not see the proof of the article on "Textile Foil," by our friend Dr. Waye. And had we corrected the proof it might have been still worse. Arriving a little late, it seemed necessary to use it with but a single correction. But will the reader turn to page 63 of the

February number and in line 7 read rarely for surely? then pass down to line 14, and read tends for seems? and next pass down to line 16 and mentally insert the article a before "plentiful lack"? having previously changed and to are, in same line?

Societies.

"Wherewith one may edify another."

ALABAMA DENTAL ASSOCIATION.

The Alabama Dental Association will meet in Montgomery, Alabama, on second Tuesday in April (13th), and continue four days. All dentists are cordially invited to be present.

J. C. Wilkerson, D.D.S., *Pres't*,
Selma, Ala.

T. M. Allen, D.D.S., *Sec'y*,
Eufaula, Ala.

KANSAS STATE DENTAL ASSOCIATION.

The fifteenth annual meeting will convene at Topeka on Tuesday, May 4th, continuing three days. This meeting will be made the most interesting and profitable one in the history of the association. Members of the profession in other States are cordially invited to be present. Topeka is easy of access and has excellent hotel accommodations.

C. B. Reed, *Secretary*,
Topeka.

ILLINOIS STATE DENTAL SOCIETY.

The Executive Committee of the Illinois State Dental Society announces the following list of reports and essays for the next annual meeting, which will be held at Rock Island, the second Tuesday in May.

1. Report of the committee on Dental Science and Literature, Dr. Homer Judd, of Alton, (Chairman); Dr. C. R. E. Koch, of Chicago; Dr. M. L. Hanaford, of Rockford.

2. Report of the committee on Dental Art and Mechanism, Dr. J. Frank Marriner, of Ottawa, (Chairman); Dr. J. A. Swasey, Dr. W. T. Magill, of Rock Island.

3. Essay, Dr. John S. Marshall, of Chicago: "Oral Surgery."

4. Essay, Dr. C. R. Taylor, of Streator: "Preparation of Pulp Canals and Cavities for Filling."

5. Essay, Dr. Homer Judd, of Alton: "The retention of Pulpless Teeth in the Jaws."

6. Essay, J. D. Moody, of Mendota: "Post Graduate Study."

7. Essay, Dr. J. D. Reid, of Chicago: "Oral Chemistry."

8. Essay, Dr. E. S. Talbot, of Chicago: "Separating Teeth preparatory to Filling them."

It is probable that Dr. G. V. Black, of Jacksonville, may have an Essay, the subject of which he is not yet ready to announce.

The Executive Committee have decided to issue this preliminary announcement (which is subject to such changes or additions as may be found desirable), in order to give members of the society an opportunity to prepare themselves for a profitable discussion of the subjects proposed, and to avoid the necessity for issuing the final programme till very near the time for the meeting.

Edmund Noyes,
E. J. Green,
W. H. Taggart,
Executive Committee.

Chicago, January 7, 1886.

CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY.

At the annual meeting of the Central Dental Association of Northern New Jersey (the only local society in the State), Feb. 15, 1886, the following officers were elected: President, Dr. B. F. Luckey; Vice-President, Dr. Geo. E. Adams; Secretary, Dr. James G. Palmer; Treasurer, Dr. Chas. A. Meeker. Dr. S. C. G. Watkins, Dr. W. P. Richards, Dr. Harvey Iredell, Dr. Oscar Adelberg, Dr. C. F. Holbrook, Executive Committee.

James G. Palmer, *Sec'y*,
New Brunswick, N. J.

IOWA STATE DENTAL SOCIETY.

The twenty-fourth annual meeting of the Iowa State Dental Society will be held in Iowa City, beginning the first Tuesday in May, continuing four days. The sessions will be held in the buildings of the Dental Department of the university. A very interesting and instructive programme is prepared. The clinical part of the programme will far excel anything the society ever had.

Dr. R. L. Cochran, superintendent of clinics, has secured quite a number of able operators from other States, together with a number from our own State. All late advances made by the profession will receive attention. Dr. Atkinson, of New York City, will demonstrate "Sponge Grafting." There will be clinics in various methods of crown work in the use of matrices in filling. In filling with the electric mallet, in the use of gold and iridium, and gold and platinum for filling when exposed to wear. Continuous gum work will be demonstrated. Filling root canals will receive attention from able operators, also the best methods of operating for diseases of the antrum and pyorrhœa alveolaris. Methods of regulating teeth will be demonstrated; a cleft palate and its obturator, and an artificial ear will be exhibited. Altogether this meeting will be as full of interest to dentists as as any ever held by a State society.

A cordial invitation to dentists from other States, as well as to those of our own State.

Officers—President, A. Morrman, Iowa City; Vice-President, R. L. Cochran, Burlington; Secretary, J. B. Monfort, Fairfield; Treasurer, J. S. Kulp, Muscatine.

J. B. Monfort, *Sec'y.*

CINCINNATI ODONTOLOGICAL SOCIETY.

The above society was incorporated last month by Drs. J. Taft, A. Berry, E. G. Betty, M. H. Fletcher, N. S. Hoff and J. S. Cassidy, for the promotion of the science and art of dentistry.

THE AMERICAN DENTAL ASSOCIATION.

THE 1886 MEETING.

The Union Pacific Railway Co., and connecting lines, have agreed to sell to members of the American Dental Association delegates to the same, and all dentists and their families desiring to attend its meetings, round trip tickets to San Francisco and return at the very low rates to be given to the G. A. R., provided the association will hold its next annual session in San Francisco, the last week in July of the coming summer. The other transcontinental lines will probably soon give us the same terms. These tickets will be good for 30 days from July 1st going, and for 85 days returning.

The round trip rate will be $50 from Council Bluffs, Ia., Omaha, Neb., Leavenworth, Kan., St. Joseph, or Kansas City, Mo., to San Francisco and return. About $60 from Chicago, Cincinnati and St. Louis; $75 from the Atlantic coast. No extra charge for returning by one of the other Pacific lines to its eastern terminus if desired and arranged for before the journey is begun. If exchange of ticket is made after arriving in San Francisco, $10 additional is charged.

Free baggage allowance, 150 pounds per ticket.

Round trip rates from San Francisco to interior and coast points will be exceedingly low.

Return tickets via Portland and the Oregon Short Line or the Northern Pacific R. R., will be sold, at Missouri River, the additional charge being only $12.50, for steamer passage, San Francisco to Portland, provided route is selected when ticket is purchased.

Special trains will be given with privilege of stopping at desirable points such as Denver, Salt Lake City, etc., and schedule so arranged as to cross the Rocky and Sierra Nevada mountains by daylight. Everything will be done by the railroad to make the trip a pleasant one. The California State Odontological Society have taken decided and favorable action in view of our going. It seems to be an opportunity to hold our meeting on the Pacific coast, which we should not lose. All members of the

American Dental Association, and all dentists who would be favorable to the meeting being held as above will please send their names to the undersigned. Copies of the Union Pacific Tourist book can be had by addressing any office of the company and stating that you are a dentist.

A. M. Dudley,
Salem, Mass.

NINTH INTERNATIONAL MEDICAL CONGRESS.

SECTION ON DENTAL AND ORAL SURGERY.

As there seems to be some misapprehension in the minds of some, and earnest inquiry by others, as to the status of the Section on Dental and Oral Surgery in the International Medical Congress, to be held in Washington, D. C. in 1887; it seems right and proper that some statement be now made in regard to the organization and progress of the work.

It is very generally known that the Section has been established and organized; the following officers have been appointed, viz: a President, one Vice President and two Secretaries.

Four gentlemen of recognized ability and high professional standing, from various parts of the country have accepted position upon the Council, and have pledged themselves to do all they can to make this Section a success. At the next meeting of the Executive Committee, ten or twelve more names will be added to the Council, as may seem best. Much of the preliminary work in arranging the matters of the Section has been in the main accomplished.

A programme embracing the subjects of greatest interest to the profession of the world, has been outlined and is now under consideration; and as soon as completed, the secretaries will open correspondence with the eminent men of the profession in Europe and America, relative to the work to be done. Quite a number have already indicated a desire to prepare papers, or at least take some part in the work.

We not only expect, but are assured, that this Section will receive the hearty support and co-operation of dental specialists, both at home and abroad; and with such manifestations, great hope is entertained, that the Section will be eminently successful.

We ask for it the co-operation of all who have the best interests of our profession at heart.

A circular will ere long be issued by the Executive Committee giving status of the preparatory work for the Congress.

J. TAFT,
President Section D. O. S.

INTERNATIONAL MEDICAL CONGRESS.

Editor Journal:—At the February meeting of the Chicago Dental Society, a motion was introduced instructing the Secretary of the Society to furnish the dental journals with a copy of a resolution passed at the January meeting, endorsing the action of what is known as the Buffalo Conference of Dentists. Before the motion was passed, it was suggested and understood that the reasons of those who opposed its passage and declined to vote one way or the the other on the subject, should be published with the resolution. In obedience to these instructions, you will find below the resolution and the approved minutes of the society in reference to this subject, for the next number of the Journal.

The discussion is given on both sides. You can publish what was said in favor of it if you see fit, but what was said in opposition to it is to be published with the resolution.

Dr. A. J. Swasey offered the following resolution, which was duly seconded: *Resolved*, That this society endorses the action of the committee at Buffalo as regards the International Medical Congress. This called out an animated discussion in which Drs. Ottofy, Brophy, Crouse, Allport and Baldwin participated. It was claimed that the Congress was going to be a failure, and if a failure, the Dental Section would of necessity be a failure.

The resolution was opposed on the ground, that as a society, we had no right to take such action as was contemplated in the resolution. The International Medical Congress, it was said, was in no sense a delegate body, and delegates as such would not be received by the Congress. It was open to any and all persons holding the degree of M. D., in regular medicine, and such other gentlemen as should be invited to membership by the Executive Committee. Consequently membership in the Congress was an individual and private matter, with which societies had nothing whatever to do. Neither this nor any other society had a right to handicap its members or any one else by passing such a resolution. Those who were trying to organize an International Dental Congress had a perfect right to do so, provided that they felt that their duty lay in that direction; and those engaged in the work of the section would interpose no objection. The attempt to break up the section, that a Dental Congress might be made a success, was unjust and unmanly. Work in the section had been commenced long before the Buffalo meeting, and much that was preliminary had already been done, and the attempt to stop it was the height of presumption and assurance, the right to do which was emphatically denied. The resolution is simply an attempt to manufacture public opinion against the section on Dental and Oral Surgery in the Congress, and to make it odious to have anything to do with it, and is off from a piece with the letters that have been written advising those elected to office, to decline to accept, because it would be disastrous to their professional reputation to have anything to do with the section.

The very men in Chicago, who were at first exceedingly anxious for the section, and flooded the country with letters and circulars, urging its organization, when the section was organized, when they discovered that it could not be manipulated to their interest and that of their friends, went deliberately to work (and that too within a week) to destroy it. This was months before the trouble between the factions among the medical men had been developed, and which was inaugurated at New Orleans. That it is on account of the trouble in the medical profession that the instigators of the opposition oppose this section, is a pretense, a subterfuge. They dare not state their real object, which was to get control of the section if they could; but if they could not, to organize an International Dental Congress.

Those who spoke in favor of the resolution, claimed that this society was competent to act in the premises, and had a right to place itself on record as deeming the organization of the section inexpedient under the present circumstances.

Furthermore, the Congress was a delegate body, and medical societies had a right to send delegates and they would be received as such.*

The Congress, it was claimed, should be open to all dentists, and that unless it was so arranged, all had better stay away. At this juncture Dr. Baldwin moved that the resolution be laid upon the table for one month, as the matter was an important one, and the members should have an opportunity to consider it before casting their votes. This was duly seconded. The Chairman put the motion, and it was carried.

Dr. Crouse objected to the ruling of the chair, and called for a standing vote. The vote was again taken and declared lost by a small majority. A vote on the resolution was then called for and carried, the opposition previously declaring that for reasons before mentioned, they would not vote, and it was a matter with which societies had no right to meddle, that it was between the Congress and those eligible to membership, and who wished to attend.

A. W. HOYT, D.D.S., *Rec. Sec'y.*

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*The rule which governs the membership of the Congress reads as follows: INTERNATIONAL CONGRESS—Rule 1st. "The Congress shall consist of members of the regular profession of medicine, who shall have subscribed their names on the register, and shall have taken out their tickets of admission, and such other scientific men as the Executive Committee of the Congress may see fit to admit."

Dentists not holding the medical degree are included in the provision for admitting "other scientific men," and it is *now* understood that such gentlemen as the Officers and Council of the Section recommend will be invited to full membership in the Council. In this way the Section is made responsible for the respect, ability and professional attainments of the membership.—A. W. H.

Books and Pamphlets.

AMERICAN DENTAL ASSOCIATION—Transactions of the 25th annual session held at Minneapolis, Minn., Aug. 4, 1885. Philadelphia: The S. S. White Dental Mfg. Co., cloth, 178 pages. Contains the full proceedings, of which a partial report has already been published in the journals. The volume may be had of Dr. G. H. Cushing, Chicago.

HEALTH AND HOME—A monthly journal, devoted to Literature, Science, Art, and the promotion of Mental, Moral and Physical Health. Edited and published by C. W. MUNSON, D. D. S., Toledo, O., at 50c. and $1.00 a year.

This is a very valuable little paper, having for its special purpose the instruction of the public in regard to the teeth and the mouth. The publisher issues an edition for dentists to circulate among their patients. For specimens and particulars address as above.

LECTURES ON SYPHILIS, delivered at the Chicago College of Physicians, By G. FRANK LYDSTON, M. D., Prof. of the Principles and Practice of Surgery in the N. W. Dental College, etc., etc. Chicago: A. M. Wood & Co. Cloth, 184 pages. For sale by P. W. Garfield, Cleveland, O. Price $1.25.

This is a concise presentation of the subject, as understood at this time, for the benefit of students, and suited to the wants of the dental practitioner, who should be posted on the principal features of this far reaching disease because he may have to treat cases in which it plays an important, though often unrecognized, part.

TABULÆ ANATOMICÆ OSTEOLOGIÆ,—By C. H. VON KLEIN, A.M., M.D. Dayton, Ohio. Price $3.00.

The aim of this work seems to be toward uniformity in medical nomenclature, and the plan is a good one, as far as we have had time to study it. The illustrations seem to us not always accurate, nor are they in all cases well executed. Any oversights of this nature may be corrected in another edition. May be obtained by addressing the author as above.

CHARGE TO THE GRADUATES, delivered at the 29th annual commencement of the Pennsylvania College of Dental Surgery, by HENRY LEFFMANN, M.D., D.D.S. (Reprinted from *Dental Practitioner.*)

THE THERAPEUTICS OF HIGH TEMPERATURES IN YOUNG CHILDREN, a clinical lecture by WM. PERRY WATSON, A.M., M.D., Jersey City, N. J. 13 pages. (Reprinted from the *Archives of Pediatrics.*)

HYDROGEN PEROXIDE, (reprinted from the *Chicago Medical Era,*) and AN OXYGEN EXPOSE are from WM. B. CLARKE, M.D., Indianapolis, Ind., and explain the so-called oxygen treatment.

PRELIMINARIES OF THE 9TH INTERNATIONAL MEDICAL CONGRESS, (from the *Chicago Medical Journal and Examiner.*)

Our Aftermath.

ON ACONITINE IN NEURALGIA.—Though the deadly virulence of aconitine, even in minute quantities, will always form a serious obstacle to its gaining popularity among the medical public, we are in certain affections practically compelled to resort to it. We abstract from the *Gazette Medicale de Paris* (March 21, 1886), some considerations as to its physiological and therapeutic effect.

Aconitine is a powerful and rapid modifier of the nervous system; its predominant effect is concentrated at the base of the brain, consequently its influence extends over the entire system of the great sympathetic and the vast domain dependent upon the latter, enclosing the principal vital functions. Besides, it powerfully affects the sensitive nerves, reduces or suppresses their energy, and causes anæsthesia; at the same time it calms the circulation, diminishes the calibre of the capillaries, and lowers the temperature. These physiological properties, so characteristic of aconitine, render the drug peculiarly adapted for the relief of painful affections, and especially of neuralgias. The remedy is most eligible in all forms of congestive neuralgia and dermodynia (dermalgia) which have their seat in the extremities of parts where the corpuscles of Pacini are abundant. In affections of the trigeminus the effects of aconitine are often marvelous, as illustrated by the following case. Nélaton had performed resection of all branches of the trifacial nerve on a patient without, however, in the least abating his excruciating pains. The patient driven almost to despair, demanded another operation; exterpation of the Gasserian ganglion had been decided upon, when, upon the recommendation of Prof. Gubler, the employment of aconitine was tried. In a short time the patient expressed himself to be utterly free from all pain and continued to be so. In *tic doulоureux* aconitine has often proved the only relief-affording remedy; the same may be said of irritating and painful affections of the respiratory tract, as in asthma and convulsive cough; also of nervous palpitations, angina pectoris, and in the painful acute forms of rheumatism and gout, where the drug claims both the nervous and vascular erethism. As certain patients are particularly susceptible to the action of aconitine, minute and largely-diluted doses of its solution have to be begun with. Granules exactly dosed are doubtlessly the most preferable preparations of aconitine.

HARE-LIP OPERATIONS.—Dr. Gotthelf publishes in the *Archiv. fur klin. Chirur* statistics of hare-lip operations in the Heidelberg Clinic. Of forty cases operated upon all were dismissed cured, although half of the children died afterwards. He believes that the mortality among operated hare-lips during the first year of life is due to the operation rather than to the disease. He lays down the rule that weak children should not be operated upon during the first year, while with healthy children, the best time for operation is the fourth, fifth and sixth months, just before dentition.

CAMPER'S FACIAL ANGLE.—Pierre Camper was born at Leyden, May 11th, 1722, and died at Hague, April 7th, 1789. Camper is considered the greatest medical man Holland ever produced, with the single exception of Boerhaave. Camper was the originator of the celebrated *facial angle*. He drew two lines, one almost horizontal from the foramen of the ear to the superior maxilla; a second line, almost vertical, was then drawn from the forehead to the superior maxilla. It is the angle formed by the meeting of these two lines that constitutes the facial angle. According as this angle approaches more or less a right angle, so accordingly is the individual endowed with more or less intelligence. At least, this is the modern vulgar idea of the facial angle, which, according to Camper, was only a method of estimating the characteristics of the various races of men. According to Camper, the Greek statues of the gods presented a facial angle of 90°; Europeans, 80°; Negroes, 70°; and the orang-outang, 58°. Following Camper's ideas on this subject, Cuvier, Geoffary, St. Hillaire, and later Martin and Broca, investigated the same subject.—T. C. M., *Cin. Lancet and Clinic.*

IODOL — A SUBSTITUTE FOR IODOFORM. — To the progress of synthetical chemistry we owe in addition to our present list of local antiseptics which, if on further trial it be found to bear out the promises made for it by its discoverers, bids fair to take the place of iodoform altogether. Iodol, the substance referred to, is a dark powder obtained from "Dippel's animal oil." It has but little smell, and is soluble in three parts absolute alcohol, but only in 5,000 parts of water. More than two hundred observations on various diseases have been made with it in the Royal Surgical Institute in Rome. It was used in substance, suspended in glycerine, and as ointment. In many cases of simple indolent ulcers iodol was equally valuable, the whole character of the sore becoming changed after a few applications. Neither erysipelas nor diphtheria was ever observed in cases treated with iodol.—*Medical Record.*

EARLY RISING FOR LITERARY WORKERS.—Rev. Mr. Haweis, an English writer of some note, says: "Morning literary work is usually characterized by freshness, continuity, grasp, and vigor; night-work by fever, excitement, and less condensation. This I believe to be the rule; and with exceptions, in speaking thus generally, it is of course impossible to deal." If this view is true, we are inclined to believe it is, we can recommend doctors to adopt it. It would be a desirable thing to secure more "continuity, grasp, and condensation" for medical writings.

A NEW HEMOSTATIC AGENT.—Dr. Spaak claims for the following solution excellent results: Chloroform two parts, water one hundred parts. He says that he has used this hemostatic liquid for several months, and attributes to it the following great advantages: (1) It acts with rapidity; (2) it possesses no escharotic action; (3) it is to be had everywhere, and may be prepared instantaneously; (4) it costs very little; (5) it possesses no disagreeable effects, and does not hinder a surgeon in his operations.—*Cols. Med. Journal*

Hard Working Men are often advised to have a hobby—something quite outside their ordinary line of work—to which they may devote spare moments by way of relaxation from the routine affairs which occupy the greater portion of their time, and I think the advice is good. Your real hard worker does not care much for frivolous amusements. They do not as a rule interest or even amuse him, but he can find real relief in some occupation which, while it calls for thought, does so in a new direction. In this way his mind unbends; the ordinary labor is thrown aside, and that which entertains him, and is at the same time not unprofitable, he pursues with pleasure, for a really busy man does not like to feel that he is wasting time. The number of hobbies is almost without limit. There is microscopy, geology or botany—indeed, almost any of the natural sciences, and especially those in which collections can be made; the gathering of coins or autographs; genealogical or local historical researches; the study of some language or literature or the works of some author. Any one of these, or other like subjects, pursued at odd times will serve not only to divert from the dull round of daily cares, but to afford much useful information as well.—Dr. W. G. Tucker, *Albany Medical Annals.*

The Art of Reading, says Hamerton in his "Intellectual Life," is to skip judiciously. Whole libraries may be skipped in these days when we have the results of them in our modern culture, without going over the ground again. And even of the books we decide to read there are almost always large portions which do not concern us and which we are sure to forget the day after we have read them. The art is to skip all that does not concern us, whilst missing nothing that we really need. No external guidance can teach us this, for nobody but ourselves can guess what the needs of our intellect may be. But let us select with decisive firmness independently of other people's advice, independently of the authority of custom.

What the Profession Needs.—"A full one-half of the young men who come to Philadelphia to study medicine should be turned face about and sent to a village school. The place to intercept incompetents is at the entrance of the medical schools, rather than at their exit.—*Dr. J. E. Garretson.* "The profession is now thoroughly awakened to the necessity of arresting the course of the schools that are annually sending forth thousands of improper persons to practise on the community. . . . . The diploma of schools should be beyond suspicion. The signatures should do more than convey the mere intelligence that the holder of a certain certificate has paid his money for two courses of lectures and thirty dollars for the engrossed parchment attesting same. It does little more just now.—*New England Medical Monthly.*

Mending Rubber Dam.—As soon as the rubber is torn place a napkin under it to stop the flow of saliva, and wipe it dry. Moisten the surface of a piece of vulcanized rubber with chloroform, place it over the break and hold it in position a moment, when it will be found firmly adherent.—*Independent Practitioner.*

THAT THIRD MOLAR.—In the *Independent Practitioner* for February, Dr. Van Marter ("Prehistoric Dentistry") calls attention to the absence, in the Etruscan remains, of the third molar. "In No. 2 the teeth were equally fine, but twenty-eight in number, with no trace or sign of there ever having been thirty-two. In three other skulls I noted the same want of the third molars. Evidently they were never developed. It is worthy of note that, in the comparatively few remains of prehistoric skulls in the above collection [the Museum of Bologna], there should be such a proportion of those in which the third molar does not appear. About one-fourth of the third molars were wanting. What then becomes of the theory that the wisdom teeth are becoming rudimentary and disappearing? Perhaps they disappeared once before, and reappeared again in an age of wisdom, but are now fading away, marking a decay in that dental evidence of sage understanding."

OIL OF SASSAFRAS IN NEURALGIA.—A young man came with his face tied up, and suffering, as he said, excruciating pain, as he had been for several weeks, in spite of all the treatment given him. Satisfied that it was neuralgia of the sensitive nerves of the one side of the face, which had resisted quinine and morphine, and the various counter-irritants used in his case, I told him to saturate a piece of flannel with the oil of sassafras, and rub the affected side of the face briskly until the skin was reddened by the friction, and take a teaspoonful in several teaspoonfuls of water, and swallow it. The next time I saw him he declared that in ten minutes after taking the oil of sassafras he was entirely well, and remained so. He spoke of its exhilarating and cheering influence upon him, such as he had never experienced in taking other medicine.—*Virg. Med. Monthly.*

THE TOXIC PROPERTIES OF SASSAFRAS.—Dr. Charles L. Hill read a paper before the Medical and Chirurgical Faculty of Medicine of the State of Maryland in which he related the particulars of a case of poisoning by the oil of sassafras.

At a late meeting of the Chicago Gynæcological Society it was stated that sassafras was much used by women in cases of suppressed or delayed menstruation and to produce abortions.—*Jour. Am. Med. Assn.*

ANÆSTHETICS caused the death of eighteen persons in England and Scotland last year. Nine were from the use of chloroform, six from ether, and three from a mixture of ether and chloroform. In every fatal case the patient had been comparatively healthy, and the operation was of a slight character. *Caulk's Dental Annual.*

AVERAGE DURABILITY OF PLATES.—Rubber 6 years, 7 months; celluloid 4 years, 4 months; gold 16 years. Averages made from 537 cases by Dr. E. A. Stebbins. (Conn. Valley Dental Society.)

COCAINE is a Methylbenzomethoxyethyltetrahydropyridinecarboxylate. Why is it not called by its proper name?

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

Vol. VI. APRIL 1, 1886. No. 4.

Contributions.

"A word fitly spoken is like apples of gold."—Solomon.

SOME PHENOMENA OBSERVED IN THE USE OF ANTISEPTICS IN DENTAL SURGERY.

BY H. A. SMITH, D.D.S., CINCINNNATI.

[Read before the Mississippi Valley Association.]

Of late years the study and investigation given to the large number of substances, known as "antiseptics," because of their capability of exerting a detrimental influence on the life and growth of micro-organisms, has done much toward placing the practice of general surgery upon a scientific basis; and in our own deparment we have been greatly aided in developing a more exact system in the treatment of certain morbid conditions that frequently come under our notice as dentists.

Notwithstanding the study and investigations made bearing upon the relative value of the various antiseptics, there are certain phenomena presented in the treatment of special cases, that it is difficult to satisfactorily explain in the light of our present knowledge of the efficient strength of these substances. It is my purpose in this paper to call attention to some of these cases where, for some unexplainable cause, we are unable to control or counteract septic influences. For example, take a case of deep seated caries, where the pulp of the tooth is nearly encroached upon, though not in any degree exposed. In excavating such a cavity it is usual to leave a portion of decalcified or softened denture overlying the pulp in the bottom of the cavity. This layer is treated antiseptically, with the object of destroying the micro-organisms present in the partially necrotic layer of organic matter. Following this treatment, the cavity is filled. Air and moisture are excluded, and irritation by thermal change is avoided, by judiciously selecting the filling material. The tooth remains quiet, and to all appearances is in a healthy condition. After the lapse of a period varying from one month to several years, suddenly, and without apparent cause, a disturbance of the pulp is set up, and the inflammation passes on through the several stages; and, upon opening the pulp chamber, we find that the pulp has undergone putrefactive decomposition. Accepting the statement that the putrefactive process is always associated with micro-organisms, it is an interesting inquiry how the putrefactive organisms obtained entrance to the interior of the tooth. The cavity being sealed carefully, no infection could have been introduced from without.

We have treated the layer of carious dentine covering the pulp with an agent said to be detrimental to the life and growth of the organisms undoubtedly present. We have treated the cavity antiseptically; but are we sure that we have killed the organisms? Is it not probable that the agent used was not a true germicide—at least not in the dilution we have applied it? and in our treatment we have simply brought about a condition unfavorable to the growth of the organisms. This antiseptically treated layer, under the filling, is in close relation with the soft, moist tissue of the dental pulp, and in time may take up, by imbibition or otherwise, moisture or exudate from the pulp, and thus fresh nourishment is furnished to the organisms supposed to have been killed, and they begin to grow and multiply. Septic matter is developed, which, in turn, irritates the pulp. The disease progresses, and in time we find the pulp dead with the stinking products of putrefaction present, and all owing, it would appear, to our failure in rendering the softened layer of dentine covering the pulp permanently antiseptic.

But in another class of cases that occasionally come under our notice, we have putrefactive decomposition of the pulp, and yet the pulp could not have been brought in contact with germs, excepting through the general circulation. I refer to cases where the tooth has received a blow which caused the death of the pulp. After a varying length of time these teeth usually show irritation of the surrounding tissues leading to the formation of alveolar abscess. If we tap these teeth into the pulp chamber before the abscess has bursted, we generally find the bad smelling products of decomposition, which indicate the presence of septic organisms. There is no breach in the continuity of the crown of the tooth, hence it becomes an interesting inquiry how the organisms came to be present in the disorganized tissue of the pulp, shut off effectually as it is from the outer world. Klein, in his late work, "*Micro-Organisms and Disease*," says, "All septic and zymogenic organisms, properly so called, differ in this essential respect from pathogenic organisms, that the former two, absolutely refuse to grow in the living tissues of a living animal." And in raising the question "Where do the micrococci and bacilli come from, which are capable of settling in a disorganized tissue, even during the life of the subject?" states that the cavity of the alimentary canal, small and large intestines, especially the latter, contain, under normal conditions, innumerable masses of putrefactive micro-organisms. These being much smaller than chyle-globules, must of necessity become as easily absorbed as the latter by the lacteals, and by these are carried into the general circulation, but being putrefactive, they are unable to exist in the normal blood and normal tissues, and, therefore, in healthy conditions perish. But if there be in any part a focus of disorganization, they can settle there and propagate, provided they get there through the blood in a living condition. "Many experiments," he continues, "prove that they cannot pass unscathed through the normal, healthy blood, and, therefore, it is not probable that they would reach such a focus in a living state; but let them be well enclosed in a solid particle, say of disorganized tissue, and then carried through the vascular system, and we can quite understand that in this state, i. e., in and with that particle, they may reach the distant focus in a living state, and if in this focus there is inflammation, or necrosis, we may expect them to multiply accordingly."

Having been transported to the part, the septic organisms find, in the inflamed or necrotic pulp, a suitable nidus in which to grow and set up their characteristic decomposition. If they are not thus transported, we have here a striking example of putrefaction occurring without the presence of micrococci.

The experiments of Chaureau in performing *bistourage* of a sheep's testes before and after injecting organisms into the blood, bear some relation to the pulp cavity we have described with its dead contents. In the animals injected, the testes broke down into a putrid fluid, and violent inflammation was set up in the surrounding parts. In the others the testes underwent the series of degenerative fatty changes known as *necrobiosis*. This is the invariable course under normal conditions; and it shows, apparently, that organisms are not present normally in the sheep's testes. Again, organisms cultivated from a case of osteomyelitis, and injected into animals, caused no symptoms until their bones were injured, then osteomyelitis developed. Mere depression of the vital energy of a part, or some slight alteration of its metabolism, may, therefore, be sufficient to permit the development of a germ, which previously died in it.* But the pulps of teeth killed by a sudden blow do not, in all instances, take on these putrefactive changes. On the contrary, we sometimes find them in a shrunken or dried state, or we may find them in a moist condition, and yet remaining, as we say, "sweet."

If for any purpose we should drill into the pulp chamber of such a tooth, without observing the proper antiseptic precautions, we would most likely have irritation set up in the root membrane and parts about, caused by micro-organisms being admitted with air and the fluids of the mouth, through the artificial opening. Usually we treat such a root with some approved antiseptic, until all symptoms of inflammation have subsided. The canal is filled with a fibrous material well saturated with our favorite antiseptic. The opening is carefully stopped, so that no air or moisture can be admitted. The tooth remains quiet for a month, it may be a year, when suddenly it becomes tender to the touch, threatening abscess. We unstop the root, and find the contents offensive, denoting the presence of septic germs. They could not have entered from the outside. Have they been transported in the manner referred to? Is it not more probable, since we know that organisms were once in the root canal, that our supposed germicide has not annihilated the life of the micro-organisms, as we expected, and that in its use we have simply brought about a condition that, for an uncertain period, has had only the effect to retard the growth of the organisms in question?

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*Green's Pathology, p. 434.

I stated in the beginning that the study of the properties of antiseptics had done much to aid us in the intelligent treatment of morbid processes frequently observed in oral surgery. We need only contrast the results obtained under the old system, with those had by the strict observance of the most approved antiseptic methods, to verify the truth of this.

And yet we are quite in the dark as to whether the substance that we call an antiseptic is, in the true sense, a germicide; that is, having the power of annihilating the life of the particular organism with which we have to deal. The phenomena observed following the most intelligent use of antiseptics in the oral cavity, to which your attention has been called, show that there is before us an interesting field for research.

In dental practice we have frequent opportunities of testing the strength of antiseptics that seldom offer in general surgery. The pulp chamber may be made a closed cavity, and these agents may be used in the highest dilution without much danger of bad results. We should, therefore, seize upon the favorable opportunties open to us, and institute a rigid and systematic series of investigations as to the comparative value of the numerous substances that are now brought to our notice as antiseptics.

HYDROGEN PEROXIDE AND ITS UTILITY.

BY G. W. SMITH, CINCINNATI.

[Read before the Mississippi Valley Association.]

I DESIRE, in this paper, to call your attention to an agent of remarkable power and utility; one which, by virtue of its varied qualities, is foreshadowing the possibilities that are soon to be realized from its use.

Hydrogen Peroxide was discovered in 1818 by Thenard, a French chemist, and it was introduced to the medical profession in 1858 by Dr. Richard. Passing over the chemistry of its production, it will be sufficient for the purpose of this article to merely state that it is liquid oxygen, and that the pure article gives off 475 volumes of oxygen. This agent contains a much larger constituent of oxygen than hydrogen, according to chemical test. A pure article of liquid oxygen has the capacity of yielding up 475 volumes of oxygen; that is, when liberated, the gas will pass off in the form of oxygen, 475 times the volume of the water in which it was retained. It should be kept cool, quiet and well corked, as the oxygen begins to escape at a temperature of about 60, or when the liquid is agitated. Its retaining solution is sulphuric acid. We are told that the only caution necessary in the use of a good article, is, if at any time it causes irritation when applied internally, or locally, it is only necessary to add barium water, drop by drop, till turbidity ceases, then filter, if for immediate use; otherwise it may be allowed to precipitate; then carefully decant the supernatant liquid, leaving the milky deposit as refuse.

Ozone is the controlling principle in hydrogen peroxide, and liquid oxygen is the allotropic form of oxygen. Although but little is known of ozone, it has considerable interest attached to it in a sanitary point of view, and the extent of its presence in the air is registered at the Meteorological Observatories; and it is also embraced in the reports of the medical officers of the Government. Ozone acts as a safeguard or regulator of the air. It is the active principle of oxygen. Remove it and all animal life would perish. And, upon the other hand, if it be present in excess it would prove alike destructive. It is not only the life-sustaining principle of oxygen, but it is also an agent capable of destroying infectious and fetid odors. It has a decided sanitary influence upon all disease-bearing and putrid matter which determine epidemic and endemic diseases.

Hydrogen Peroxide, when brought in contact with diseased germs, destroys their vitality, arrests further decomposition in organic matter, and restores the injured parts to a normal condition. It is cleansing, odorless, colorless, stimulating and does not stain. It destroys pus, causes no pain by its application, is not poisonous, and is healing. The moment liquid oxygen touches pus, effervescence is the result, and this will continue until the last vestige of pus is absolutely destroyed. It may be applied to the most delicate tissue without pain or destruction. Judging from the investigations and testimony of many eminent French and German writers, chemists and physicians, it may yet prove to be a formidable weapon in the hands of the dental profession, to battle with the various local diseases which present themselves for treatment in our daily practice. My own experience within the past year has convinced me that it is the most reliable anti-putrid application known, and if intelligently employed, it is as bland as water.

I wish to call your attention to a few practical tests in which I found it active, and efficient:

My first experience with hydrogen peroxide was in the treatment of a chronic alveolar abscess, involving the second superior bicuspid. According to the patient's own account, the fistulous opening had never ceased to discharge its vitiated contents for two years. Leaving the tooth filled upon the anterior and posterior approximal surfaces, I approached the pulp-chamber by way of the grinding surface. After removing, as fully as possible, the débris from the root-canal, I formed a piston out of a suitable instrument, armed with cotton, and with this I succeeded in forcing the liquid oxygen through the root-canal. I repeated the operation, changing the cotton each time until it gave evidence upon the surface that the agent had completely penetrated the fistulous opening. I then introduced a pledget of cotton saturated with liquid oxygen, and sealed the opening with wax, and dismissed the patient with instructions to call for another application in three days. The patient called at the appointed time, when, to my great surprise the abscess had completely yielded to the first application. And at the point where the pus had previously found relief, there was a well defined cicatrix. I however made a second application and sealed the cavity as before, and at the expiration of seven days completed the operation by filling the root-canal. I have seen the patient frequently since, and up to the present time the tooth has remained perfectly healthy.

The second case was that of a first superior bicuspid, for which I had prepared to mount a porcelain crown. In the effort to enlarge the root-canal sufficiently to receive the pivot, I closed the upper portion of the canal, consequently there was no escape for the confined gas, and abscess was the result. I succeeded in relieving the pus sack at the apex of the root by opening up the root-canal. To this case I made three applications at intervals of three days. At the expiration of nine days all symptoms of alveolar abscess had subsided. I then proceeded to fill the upper third of the root-canal, and mounted the crown, which has been doing good service as a substitute for eight months.

The third case I have selected, from the many that I have treated with this agent, was a lower second bicuspid. The tooth, upon the anterior approximal surface, contained a large gold filling, which doubtless was the primary cause of the devitalizing of the pulp. This case was one of no little interest. The abscess would make itself manifest about once in thirty days, more or less. The pus would, after its accumulation, gravitate to the surface and relieve itself, with but little pain or suffering to the patient. The fistulous opening would then close, leaving the periosteum, in that region thick and indurated. I gained access to the pulp chambers through the grinding surface and commenced the treatment with hydrogen peroxide. After the third or fourth application, the thickened and somewhat indurated condition of the periosteum began to grow less, and finally disappeared. The root-canal of this tooth has been filled six months without the least symptom of the former lesion.

I might, had I the time and space, add many more cases of alveolar abscess that have yielded more promptly to this agent than to any antiseptic I have ever used. And here, if you will allow the digression, I wish to record a prescription that has been well tested, and will be found invaluable as a dressing for root-canals. It may be introduced immediately before filling, or it may be applied to the root-canal and allowed to remain a day or two before filling.

℞	Iodoform,	gr. xxv.
	Bals. Peru,	gtt. x.
	Carvol,	gtt. x.
	Ungt. Petrolie,	ʒ ss.

Rub well together.

The action of liquid oxygen upon disease germs and morbific matter is, in appearance much like the culinary operation of whipping eggs. It has a decided advantage over many other antiseptics in that it not only destroys pus, and bacteria, but dislodges decomposing matter, and imparts to the injured tissues new life and vigor. Hydrogen peroxide possesses a power for bleaching which is seldom found in any agent, the principle of which is due to the ozone it contains. It may be applied with favorable results as a lotion, in the strength of ℥j to ℥iij of water, for mercurial stomatitis, foul and indolent ulcers, aphthæ, and gangrene of the mouth; and also as a deodorizer in those very offensive conditions of the breath, caused by cheesy, granular, inspissated deposits about the tonsils. For we are convinced that in many cases this foul condition of the breath emanates from this often overlooked cause.

It will be found invaluable in the treatment of Riggs' disease, especially where the gums have become detached from the teeth, leaving deep pockets which are the receptacle of vitiated pulpy deposits, a cesspool of putrefaction, which may be completely controlled by this agent. It may be applied in full strength for alveolar abscess, bleaching teeth, and as a dressing for all pus-discharging wounds; and for internal use a two per cent. solution is sufficient.

As hydrogen peroxide is not a new remedy, I cannot find words more appropriate to close this article than those written many years ago by Dr. Benjamin Rush: "Perhaps all the discoveries of future ages will consist more in new applications of established principles, and in new modes of exhibiting old medicines, than in the discovery of new theories, or of new articles of the Materia Medica."

DEATH FROM LODGMENT OF A GOLD PLATE IN THE BRONCHIAL TUBES.

BY DR. J. W. JAY, RICHMOND, IND.

[Read at the Forty-Second Annual Meeting of the Mississippi Valley Association.]

Enos Mote, the subject of this writing, resided near West Milton, Miami County, Ohio, sixteen miles north of Dayton. About the year 1848 he had his four upper central teeth knocked out by a handspike, while trying to roll a heavy log. In the course of time he had those teeth artificially substituted by Dr. Sylvanus Tolbert, who was then a leading dentist of the city of Dayton.

He had been afflicted occasionally with something like epilepsy, and in the evening on the third Sabbath in August, 1855, he had a fit on the public highway, near his father's house, into which he was carried, and where he remained during the night.

Near 3 o'clock in the morning, he was seized with another one. His wife called for assistance, as he struggled fearfully; and it was soon perceived that his artificial teeth were gone. After the paroxysm had ceased, and daylight had dawned, diligent and persistent search was made for them, both in and out of the house, but to no purpose. His wife said she recollected pushing them into place, after he had recovered from the spasm on the evening before, one side having dropped down from its position. During the day following the loss of the teeth, he had frequent and severe paroxysms of coughing, and also during the succeeding night, accompanied with severe pain, and a feeling as though there was a lump of something in his left lung as large as his fist. As nearly as he could tell, from the sensation that he had, it was located at the region of the bifurcation of the bronchial tubes, from the main trunk. Within a few days, a hemorrhage, more or less severe, followed each paroxysm of coughing, attended with intense pain. A nephew of his, with whom I am well acquainted, and who has kindly furnished me with the facts in the case, though but a lad at the time, fully believed that the teeth were in the lung of his uncle, and were producing all this disturbance. He gave it as his opinion that the teeth had gone into the lung during his struggles in the fit that he had at three o'clock in the morning. He so stated his convictions to the attending physicians, who entirely discarded the idea, and gave it as their opinion that it would have been impossible for him to have lived five minutes with such a foreign substance in his lung.

The case went on with no satisfactory solution in reference to the loss of the teeth, and the cause of the physical condition under which he was laboring. He was faithfully attended by his family physician and others in consultation, who administered to his needs according to the best of their ability, without being able to afford him any permanent relief. As might be expected, under the circumstances, his sufferings were very great, and finally he began to expectorate very freely, and gradually grew worse, from week to week, very much the same as one going down with phthisis pulmonalis. In fact the doctors said it was that. Finally he died, in August, 1856, five days less than one year from the time of the disappearance of the teeth. This nephew, who was with him the most of the time during his decline, suggested and urged a *post mortem* examination, but the father of the dead man, being very old, objected, saying that he could not bear the idea of it, and the physicians did not think it worth while, as he had undoubtedly died of consumption. And being only a lad, without the necessary influence, he was forced to give it up, but without being convinced that he was wrong in his conclusions. Twelve years after the death of his uncle, he was in Iowa, and in the office of a physician, a cousin of his, he picked up a medical journal, and in looking over its pages, he came across the report of a case, in which a man had gotten a foreign substance in one of his lungs, which resulted in death. The attending symptoms detailed in this case, corresponded so exactly to those of his uncle's, that he was more than ever convinced that he was right in his conclusions in regard to the loss of teeth, and the immediate cause of his uncle's sickness and death. He therefore determined, on returning home, to go down into the grave and forever settle the question, which he did accordingly, along with others, in April, 1868. They found the coffin pretty well decayed, but the skeleton in a good state of preservation, and the teeth intact, resting between the fifth and sixth ribs. Months before his death, the exhalations from his body, his breath, and the expectorated matter, were so exceedingly offensive that it was almost impossible for any one to remain long in the room with him.

DENTAL CARIES—AN INAUGURAL THESIS.

Submitted by C. E. Esterly, for the Degree of D. D. S., Ohio College of Dental Surgery, Session 1885–'86.

The name caries, as applied to the disease of the teeth whose etiology has so long baffled the dentist, is a misnomer.

The word caries is derived from the Latin, and means an ulceration of bone. Formerly it was believed that dental caries was analogous to the ulceration of bone, as the name implies, but this has long since been disproved. What we mean by "dental caries" is so well known to the dentist, that it is probably best to retain the name for want of a better term. This lesion has existed from time immemorial, and as yet, no common cause, or causes, for its existence, have been accepted.

We have nothing but *theories.* Certain physical characteristics accompany the disease that are known to all. There are three varieties, viz., the white, the black, the brown; and it is but reasonable to believe that they are produced by as many agents. The theory that we, as a loyal son of the O. C. of D. S. are most *willing* to accept, is that promulgated by Dr. Watt, who has done so much for our *alma mater* and the dental profession at large.

In his belief there is but one* kind of caries, and that the varieties arise from the different intensities with which the agents producing the disorder, attack the substance of the tooth. Nitric acid causing the white variety, sulphuric acid the black, and hydrochloric acid the brown. These acids may all be formed in the mouth, and probably attack the teeth most violently while in the nascent state.

By many, dental caries is believed to be produced by a micro-organism, by some that tooth acids and micro-organisms play third parts. According to a statement made by Dr. Miller, the little animal, if such it be, was "caught by the tail" several years ago, yet regardless of this fact, its "business end" has been doing just as lively work ever since. What matters it whether the agent causing this disease is nitric acid, sulphuric acid, hydrochloric acid, phosphoric acid, a micro-organism, any, all, or what not, so long as the knowledge does not make us better able to control it?

We know that certain anatomic predispositions to dental caries are transmitted by heredity, and that it attacks certain consanguinities. We know the order of frequency of caries in teeth of the several classes. Magitot in examining ten thousand cases of caries of the permanent teeth, found 3,350 in first molars, 1,736 in second molars, 1,310 in first bicuspids, 1,310 in second bicuspids, 777 in lateral incisors, 642 in central incisors, 515 in cuspids, 360 in third molars. This table is probably as reliable in showing rate as any data in existence. Why this very unequal rate should be, has not been satisfactorily explained.

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*We like to encourage young writers, especially when they show a good degree of aptness. This article shows clear thought resulting from careful teaching. But at this point the language may lead to error. Dr. W. does not hold that there is but one kind of caries, unless in the sense that the several varieties have kindred origins. He holds that each is a distinct lesion, specific in its exciting cause, and in reference to these causes our young author has rather clear ideas.—ED. JOURNAL.

We know that the savage has comparatively perfect teeth, and that among peoples whose intellectual faculties have been most developed, dental caries is most prevalent. If this continue to be true, the number of dentists in demand will be in direct proportion as education advances. This is indeed a discouraging thought. Without knowing the cause, the educated dentist of to-day is able to treat this disease with success that is indeed wonderful! In this attainment the advance has been great in the past few years, but it is principally because of greater manipulative skill, and improved instruments and appliances. Dental caries proper, is arrested only by mechanical means, and is accomplished by cutting away the diseased portion of the tooth, and perfectly filling with some foreign material. To do this successfully, in view of restoring a carious tooth to usefulness, skillful manipulation, and perfect instruments are not all the necessary requisites.

We must be thoroughly acquainted with many other diseases to which a tooth is heir, its structure, and the adjacent parts. We must also know the effect of the material introduced, upon the tissues, etc. Of all the materials now in use, the *best* is far from perfect. The idea of filling teeth has been credited to Amelius Cornelius Celsus, the Roman medical writer, who lived in the 1st century. The Greeks filled teeth with gold ages ago; and to-day it is our *valued* material. How much there is yet to learn of this most common of all lesions! New theories as to its cause are being constantly advanced, of no value except to muddle the student's mind; but could a theory be presented that would materially aid in the prophylactic treatment of this lesion, what a boon it would be to suffering humanity! The name of its originator would be handed down the ages as a benefactor to his race.

How soon will we get more light on this obscure subject? Is it as mysterious as the vital phenomena of living matter? Must we treat on and on in this empirical manner *forever?*

When the cause of this disease is known, when we have found a preventive treatment, when we have found a perfect filling material, a substance, that has no deleterious effect upon any of the tissues, that has the same conductivity as the substance of the tooth (enamel and dentine) that is of similar color, and will take a like polish, that is of the same hardness and durability, that will adhere to the tooth substance itself, that is of easy manipulation, and crowning all this, when we have found a harmless agent that will render the operation of filling teeth *painless*, we will have reached the *ne plus ultra*, and our most sanguine desires will have been realized. Should this epoch in the history of the dental profession ever come, the art will have made rapid strides toward perfection. The shiny, mutilated appearance of the teeth of the American people will have disappeared, and we will have triumphed over *dental caries.*

MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

FORTY-SECOND ANNUAL MEETING.

[Reported for the JOURNAL, by the Editor.]

FIRST DAY—MORNING SESSION.

THE Association assembled for its forty-second annual meeting, in the Ohio Dental College, Cincinnati, O., March 3d, 1886. The President, Dr. A. F. Emminger, of Columbus, was in the chair, and the Recording Secretary, Dr. A. G. Rose, of Cincinnati, was at the desk.

The meeting was opened with prayer, by Dr. W. Storer How, of Philadelphia.

The President announced the first subject named in the published program as in order. It had been arranged that Dr. J. W. Jay, of Richmond, Indiana, should open the discussion on this by reading a paper, but as he was not present, other papers were called for, and Dr. A. G. Rose read one on THE TREATMENT OF PULPLESS TEETH.

[This, and all the papers read at the meeting, with probably a single exception, will duly appear in the pages of the JOURNAL. —REP.]

Dr. G. W. Smith, of Cincinnati, read a paper on HYDROGEN PEROXIDE.

Professor H. A. Smith read a paper on ANTISEPTICS, OR GERMICIDES.

[By delay of the train, and other mishaps, we failed to reach the meeting in time to hear the beginning of the discussions on these papers; but Dr. Sage, who was reporting for *The Cincinnati Medical and Dental Journal*, kindly permitted us to refer to his notes.—Rep.]

After the above papers had been read

Dr. H. L. Moore expressed himself as extremely gratified, as a member of the Executive Committee, inasmuch as the committee had hesitated as to putting the subject of Pulpless Teeth into the program, fearing that it would elicit no interest, yet now we see that it has called out these three papers, while still another may be forthcoming.

Dr. H. A. Smith said there were some points in his paper still obscure. To illustrate: Suppose we have a large cavity of decay in a tooth, with the pulp not exposed, the tooth free from pain, and with a portion of softened, decalcified dentine over the pulp. We dry the cavity with warm air, using alcohol also, to insure absolute dryness. Then we use our antiseptics, carbolic acid, peroxide of hydrogen, chloride of zinc, etc., and finally, after full and satisfactory treatment, we put in a permanent filling.

Now why did we use the antiseptics? To kill the micro-organisms. We have carefully excluded all irritants, and have finally introduced a moisture-proof filling. Time passes on, and all seems satisfactory and right. But have we any assurance that sooner or later, the micro-organisms will not penetrate and cause irritation of the pulp? We may find in six months, or in one or two years, that the pulp has been destroyed. No decay may be visible, and there may be no perceptible irritation.

And how has this destruction of the pulp been brought about? Did the septic germs reach it by way of the general circulation? Or did our antiseptics only paralyze the germs originally there? And did they, for the periods above mentioned, rest in a dormant, inactive stage, and at last gradually regain their activity with the revival of their vital force? His point, he said, was that the original application of the medicinal agents had not killed, but had simply paralyzed the micro-organisms that were threatening the pulp, from their places of rest in the softened dentine over it. And if true that, when supplied with nutrition, by moisture reaching them, their activity is restored, or renewed, then the agent used as an antiseptic had not proved to be an efficient and genuine germicide.

[In the minds of some members of our profession the idea of using antiseptics is a recognition of or acquiescence in the germ theory. But germs or no germs, a call for antiseptics is made whenever there is a tendency to fermentation or putrefaction, in the same sense that when putrefaction has occurred there is a demand for disinfectants. It is probable there is no difference of opinion as to the presence or absence of micro-organisms in putrefaction. But are they cause, or consequence? And if cause, are they primary or secondary? Their office or influence in putrefaction was once compared, by us, to that of the maggots in the destruction of unburied carcasses. The maggots aid in destroying the carcass; but chemical action begins as soon as life is gone, and sometimes sooner, as when vital force has become so enfeebled that affinity overcomes it. And at least one writer charged him with holding that maggots and micro-organisms are identical. The proteinous compounds, as albumen, fibrine, etc., combine in definite proportions with chloride of mercury, tannin, nitrate of silver, carbolic acid, etc., and nearly insoluble compounds, but little liable to putrefactive fermentation, are thus formed, and this hints at the chemical views of antiseptic treatment. No objection to killing the little bugs and bushes, even though not the leaders in the crime.—Rep.]

Dr. H. J. Kellops asked Dr. H. A. Smith what he considered the best germicide.

Dr. H. A. Smith replied that Dr. G. W. Smith says peroxide of hydrogen. He said that, for himself, he did not know. He said a great many very crude ideas are afloat as to what is an antiseptic. For dental purposes, a germicide should, without fail, kill the germs. Carbolic acid he regarded as good; but the question arises as to the proper strength for use. Peroxide of hydrogen, he said, is a very old remedy recently revived. Dr. G. W. Smith, he said, in the paper read, claims more for it than he had heard of before. He denied that it was liquefied, or liquid oxygen, but its true nature is designated by its name hydrogen peroxide. He had as yet no evidence that it was a true germicide. That it will cure abscess is not proof that it is a germicide, or even an antiseptic, for often the same results can be gained by using pure water. Often abscesses can be cured with pure water without other medicinal agent. He had made some experiments with it in the college during the session just closed, and it is evident that he and Dr. G. W. Smith do not agree as to the action of the peroxide. He speaks of causing effervescence, and destroying pus.

Dr. G. W. Smith; Yes, it makes it boil right out.

Dr. H. A. Smith replied that this was not proof of its being an antiseptic or germicide. Prof. Charles Mayr says it acts mechanically in expelling the pus, the portion of oxygen being liberated causes the effervescence, and this simply pushes out the pus. It is simply a cleaner; and this expresses its true value.

Dr. J. S. Cassidy said he had tested the peroxide in order to understand the nature of its action. A portion of oxygen is liberated from it when in contact with oxidizable materials. This liberated oxygen is active, and will rekindle an extinguished taper. The agent is decomposed by the blood, and the effervescence results as a consequence. Those who claim it heals, in general have not very clear ideas in regard to it. In fact, nobody knows much about it; and he thought some of Dr. G. W. Smith's claims in reference to it were without foundation.

Dr. C. also made some remarks suggested, he said, by certain modes of observation in reference to the local action of medicines. He had one criticism, to make, not alone on the paper, but on the general and indefinite way dentists and physicians talk about antiseptics and disinfectants. In general, they speak of them indiscriminately. He admitted, however, that there was sometimes difficulty in drawing the proper distinctions, as one class verges into another. When there is doubt he suggested the term germicide, as it may be one or the other. Of course he knew it was presumptuous to differ with Lister: He says that inflammatory disease being caused by micro-organisms, we should employ antiseptics to destroy them. The question arises, do antiseptics ever destroy micro-organisms. He was not sure. Carbolic acid, permanganate of potash, iodoform—do they destroy micro-organisms? The office of an antiseptic is to put normal, healthy tissue in a condition to resist the action of the micro-organisms. It is like a lock on a stable door. After the horse is gone, the lock is useless.

He said we all knew that an aqueous solution of muriate of cocaine, if exposed to air, will produce fungi. And will salycilic acid destroy these? No, Sir! But a six per cent. solution of salycilic acid in a five per cent. solution of the cocaine muriate will prevent the formation of the fungi. Now, as such a fungus has formed, a germicide is, perhaps, indicated. It would be so indicated, if the diseased parts were to remain just so. It struck him that a germicide was called for in a case like the one cited by Prof. H. A. Smith, where the pulp remains covered, but is nearly exposed. If the part be healthy, or nearly so, an antiseptic might be sufficient to prevent the attacks of micro-organisms. In the treatment of abscesses and suppurating pulps, our antiseptics, as well as our disinfectants and germicides, are, practically, the use—the free use of instruments. The diseased part is *removed.* It does not matter much whether medicines are used at all, if all the diseased tissue is removed. Nature's disinfectants are an abundance of fresh water, and pure air; and if, at the same time, we resort to free manipulation, then, as Dr. H. A. Smith says, water is, in many cases, sufficient to effect cures. He thought a concentration of Nature's disinfectants would give us just the same results; perhaps no better or no worse than the use of a single one or two, in combination, in the majority of cases.

Peroxide of hydrogen, he said, is not liquid oxygen, as called in one of the papers read, but it liberates oxygen in large proportions, under many conditions. As to the action of this liberated oxygen on pus, he thought that while the pus retained its liquid form, there did not seem tobe a destructive process set up. The pus he thought took up a portion of oxygen, while gaseous, which combined with the gases in the pus. These ordinarily pertain to putridity, and either sulphuretted hydrogen or phosphuretted hydrogen may be found in the pus, under these circumstances, and both may be decomposed by nascent oxygen.

[Both these gases may be found in pus, when not benign, and also ammonia, a combination of hydrogen with nitrogen. These may all be burned by the liberated oxygen, which is active, their hydrogen burning into water, and the other elements into sulphuric, phosphoric, and nitric acid, respectively. And the carbonaceous matter in the pus is liable to be burned by the oxygen, resulting in carbonic acid, which escapes as a gas, and is probably the cause, mainly, of the boiling, or effervescense noticed, and referred to in some of the papers.—Rep.]

FIRST DAY—AFTERNOON SESSION.

Meeting called to order by Pres't Emminger. Minutes read and approved.

Dr. J. W. Jay, having arrived, his paper was called for and read by him. As announced it was on the Treatment of Pulpless Teeth. He divided the consideration of the subject into two parts, first those without abscess, and second, those with abscess. But the JOURNAL will lay the paper in full before its readers, which will prove more satisfactory than a synopsis.

DR. H. A. SMITH spoke of the fact that it was generally recognized that dry cotton wool prevents the passage of putrefactive germs. He denounced carelessness or negligence in practice, especially in the treatment of pulpless teeth. He said that antiseptics had been used all along, almost from time immemorial, but they had been used empirically. In the treatment of the class of teeth under consideration he regarded it as important to use antiseptic treatment in the cavities.

DR. H. J. McKELLOPS inquired where the trouble comes from. These pulpless teeth may go along without giving trouble, but as soon as the pulp cavity is opened, trouble may begin. Does the trouble arise from the canal? From the apex? Or from the surroundings? When a tooth that has lost its pulp gives trouble, why is the pain at once relieved by opening the canal? Simply because the pressure is relieved by letting the retained gases escape. When the pulp dies, the tooth becomes, to a certain extent, a foreign substance. Consequently Nature tries to expel it. The gas must escape somewhere, and when there is no other outlet, it is forced by pressure through the foramen at the apex. As it is a result of putrefaction, it is an irritant; and understanding these things, we can appreciate the necessity of treatment. We can understand that time must be taken, and that *care* must be taken. The treatment does not depend upon the medicinal agents, such as carbolic acid, peroxide of hydrogen, etc., but on the intelligent application and use of them. This is generally true of the treatment of diseases, but is especially true in reference to pulpless teeth. Now, as to leaving a deadened portion of dentine over the pulp, we must exercise skill and judgment in such case, according to its merits. The dentine is softened,—tooth substance is lost, and the patient has called on us, and we must do something. We may get through all right, as we suppose, but the patient's trouble may come under the care of another dentist, when the abscess forms. Theory, he said was pretty—handsome, but it is the practical he wants. The principles involved ought to be so well understood that when we perform any operation we may know that we are doing good.

Dr. Frank Sage said that Dr. H. A. Smith's paper had interested him greatly. If the germ theory is true, he thought that nearly all that has been written on this subject will require modification, if not re-writing. He had often heard older members of the profession speak of the danger of forcing débris through the apical foramen ; but if the germ theory is true, there is danger at the apex without such mechanical forcing. Lister is not universally recognized as authority, at least not on all subjects. Hydrogen peroxide, he said, is an old remedial agent, which was now receiving renewed attention and closer observation. And by close and careful attention to the germ theory, whether or not true to the extent claimed, we can prevent much suffering on the part of our patients. The suggestion of Dr. S. that micro-organisms reach the pulp by way of the general circulation, he thought was very interesting, and it ought to receive thorough and careful investigation. If these putrefactive or suppurative germs can move in and with the general circulation, we would naturally expect them to make a nidus of the weakest part found in the system. Hence a pulp, killed by a blow on the tooth, would, as it were, invite them to take lodging within its body.

Dr. Fletcher stated that in periostitis resulting from death of the pulp, or with pulpless teeth in general, he had derived very satisfactory results from electricity. He applied the positive pole of the battery to the gums opposite the disease, using the interrupted current, for fifteen to thirty minutes, and the relief had been usually prompt and permanent. He had resorted to the same treatment in pulpitis (sic) with satisfactory success. In one case after suppuration had occurred, and an alveolar abscess had resulted, he had used the interrupted current, as above, for thirty minutes, when the pain was relieved, and the pus was, in due time, absorbed. He had found the circulation through the parts reopened by electricity thus applied, even after stasis had occurred.

[We hate the term "pulpitis." On the principles of etymology it has no right to exist; and nothing analagous occurs in our language. It is not suggestive of scholarship, but the reverse. *Gastritis* means inflammation of the stomach, but how would any one enjoy hearing it called *stomachitis?* To correspond with the vulgar term above, "stomatitis" would have to change to *mouthitis.* Of course our good friend used the term without thought, and because others do; but we wish he would not do it again, but let it be used, if it must be, only by those who have less influence than he. Leave it and its kindred slang to those who can not make them popular. We write this because we think there is a tendency with some of our profession to strain after new terms.—Rep.]

Dr. G. W. Smith claimed that peroxide of hydrogen is a true and reliable antiseptic. He understood Dr. H. A. Smith as disputing this claim.

Dr. H. A. Smith said he had not disputed the claim, but doubted it. He did not know that the peroxide is an antiseptic or germicide.

Dr. G. W. Smith read several quotations from different writers, each one classifying the peroxide as an antiseptic.

Dr. H. A. Smith said he was not disputing the germicide properties of the peroxide, but such quotations as we had just heard do not amount to much in the way of confirmation, as we can any time pick up periodicals and find A. B. and C.'s views on germicides.

Dr. Fletcher said it is claimed that septic germs can survive in pure carbolic acid.

Dr. G. W. Smith said you can bore into the canal of a pulpless tooth, wash it out with the peroxide and fill permanently at once. He pursued this course regularly, and had not had a case of abscess resulting from it in the past year.

Dr. Sage said one point stated by Dr. H. A. Smith seems not to be clearly understood. He does not deny that peroxide of hydrogen is good—a valuable remedy; but his point is that we do not know that it is a germicide.

Dr. H. A. Smith said that a student, of the session just closeed, had an alveolar abscess at the root of a lower molar. The peroxide had been persistently used, without better than ordinary success.

Dr. Rawls said he did not hear all the papers read. From the drift of the discussions he inferred that one of them claims that all septic germs can be destroyed by the peroxide of hydrogen, while another claims that we do not yet certainly know that the peroxide is a germicide. He believed that it acted as a solvent, so that effervescent pus, etc., can be wept out. He did not believe the germs are found in shut cavities. If they are, then our whole systems are liable to be full of germs, or germ makers. The fact that putrefactive agents are present, he said, is not always observable. Open into one of these shut cavities, and you perceive an offensive odor. Why is it there? Have the germs got there? No! but oxygen has been there before, and it can go where germs cannot. One by my side says he cures with the peroxide, and has very little trouble. How does he know that he has cured? He may have brought about a state of toleration, without cure. With all, you have only protected the inside of a tooth; and what have you? A dead tissue inside, while alive outside, with a zone between that must, sooner or later, give way. The periosteum is diseased at, or melted away from the apex of the root. He asked if it were possible to have new periosteal membrane unite with the denuded, eroded root.

This subject was passed, and on motion, the sixth in the program was taken up, viz.: Amalgam Fillings from the Standpoint of To-day.

As announced in the program, Professor C. M. Wright read a paper, brief, spicy and humorous, to which a synopsis cannot do justice, but we have the promise of it for the Journal, and thus hope to lay it before our readers.

It having become known that Dr. Watt had a paper on this subject he was, by motion, requested to read it, and did so.

Dr. McKellops said we know that there are ill effects connected with the use of amalgam. On removing an amalgam filling, which has been worn for some time, we find the tooth substance under it damaged.

Dr. G. W. Smith spoke of the possibility of electro-galvanic action resulting from the use of amalgams.

Dr. James Leslie said that he enjoyed listening to the papers—that Dr. Watt's was scientific and true, from beginning to end. He spoke of the evaporation of mercury at low temperatures, notwithstanding its high boiling point, and told how it might be demonstrated, by suspending a piece of gold leaf over the mercury, and finding the gold changed to the color of mercury by the mercurial vapor combining with it. This experiment he had tried with free mercury; but a question still arises, he said, as to when mercury is combined with other metals, as in amalgam fillings, is its affinity thereby satisfied? or will it still evaporate, and thus search for new combinations, as with gold? He had not tried this experiment, although among the first in this community to make amalgam. His attention had been first called to it by Dr. Geo. Evans, a son of the famous merchant tailor, Platt Evans, of early times here, who called on himself and brother, Dr. A. M. Leslie, when they were engaged in manufacturing gold foil, and wished them to analyze an alloy he had for mixing with mercury to fill teeth. He said the union between the alloy and the mercury is not a mere solution of the alloy in the mercury, but a genuine chemical combination.

SECOND DAY—MORNING SESSION.

Called to order at 10 A. M. President Emminger in the chair. Minutes read and approved.

On motion the 6th subject was passed, and 5th taken up, and was opened by a paper read by Dr. J. W. Jay, of Richmond, Indiana, the title of the paper being, REPORT OF A CASE OF DEATH BY THE LODGMENT OF A PARTIAL GOLD DENTURE IN THE BRONCHIAL TUBES. The paper is found in full in the JOURNAL.

In discussing the paper, a great number and variety of similar accidents were reported by members.

DR. MCKELLOPS told of a case where death occurred from one beak of the forceps breaking off and passing into the lungs. He told of a case in which a plate, lodged in the æsophagus, was pushed down into the stomach, and remains there yet, without inconvenience, after a lapse of five years. In answer to a question he stated that it was a rubber plate.

DR. BERRY suggested that these cases should not be reported in the public press, as the fear excited thereby would prove mischievous. He said very many cases have been reported. A man with a full denture had been found dead, sitting in a chair in his own door. Of course the upper plate dropped down in the death struggle, and the case was reported as "Death from Swallowing Artificial Teeth." He also referred to the death of Dr. M. B. Wright, and to a case in the practice of Dr. Wm. H. Mussey, in which the plate passed through the intestinal canal without injury to the patient. [This case was reported in the *Dental Register*, with a cut of the plate.—Rep.] He told also of a case reported in Hamilton, in which the plate was swallowed, then vomited up, and again swallowed by a little dog, and the dog was tied and kept till the plate was recovered. With all these he thought the case described in the paper need not stand alone.

Dr. Moore called attention to the case of Dr. Collins now present, who had accidentally swallowed a partial rubber plate.

Dr. Collins stated that he had eaten cotton wool and similar fibrous materials, and had drunk slippery elm mucilage, and at the end of three days, the plate passed in safety. Putting his hand into his pocket he produced the plate with its fibrous surroundings, showing that the idea* of the fibrous food is well taken.

Dr. H. A. Smith said that in the present advanced state of surgery, when a plate is lodged in the stomach, he would advise cutting down to it and thus removing it.

Dr. Keely said that, as we all know that Jonah swallowed the whale, and that the whale came safely through, he would move that this subject be passed. Carried.

The 3rd subject in the program was taken up, and as Dr. J. E. Low, of Chicago, who was to open with a paper, could not be present, he had sent his paper to Dr. J. Taft, and the paper was read by him. It was entitled Bridgework.

Dr. Keely wished to inquire as to whether or not bridgework had been done previous to the late excitement in reference to it. He claimed that he had done just the same work long ago, without the embellishments and ornamentations.

Dr. Van Antwerp stated that Dr. H. R. Smith had taught this style of work in the room now occupied by this meeting of the Association.

Dr. Berry stated that all the older members could recollect when this style of work was done, but we have forgotten how and when to use it. It did not make itself popular with the profession. He gave his views on the question of professional patents; and added that he thought teeth fastened tight together were not good. Sooner or later there would be dissatisfaction.

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* An account of a somewhat similar case will be found on page 436 of the Journal for Sept. 1885.—Ed.

Dr. J. P. Ulrey said he had done bridgework forty years ago, and had abandoned it as not reliable, after experiments of a few years.

Dr. Jay thought Dr. Berry had hit the key note, in saying that all fastened together would not prove satisfactory. There would be irregular pressure on the gums, and the bands and caps could not be made to fit so accurately that foreign matter could not penetrate between them and the teeth.

On motion, a vote of thanks was tendered to Drs. Low and Watt for their papers, they not being members of the Association. It seemed to be the prevalent sentiment that members must read papers in turn, and not expect thanks for doing simply their duty.

Dr. E. G. Betty moved that a gold medal, worth twenty-five dollars, be awarded to the member that will write the best essay for the next meeting, the Executive Committee to examine the papers, and make the award. [We suppose the Committee will report details as to how to send papers, what disposition is to be made of rejected ones, when they must be received in order to compete, etc.; and the Journal will be happy to lay such details before its readers, one of whom we presume will get the medal if he wants it.—Rep.]

Some one objected to the award, but it was argued that the Executive Committee had found it almost impossible to secure the reading of papers for this meeting; and that unless some plan was adopted to stimulate the minds and pens of writers, the reading of essays was likely to go by default at future meetings.

Dr. C. H. James thought it important that the Committee have authority to reject any and all papers, if not worthy of the award. He thought it might be a good plan for the Committee to have a medal prepared and show it to the boys, saying, "Write something worthy of this, and you shall have it." The motion was carried, and we advise all to sharpen their wits and their pencils, and work for the medal.

The Treasurer reported, an auditing committee announced the report correct, and it was accepted and approved.

The chair announced article 4 of the program as in order, as follows:—Clinic, Bridgework, Artificial Crowns, Herbst Method, Dental Appliances, etc.

Dr. W. Storer How exhibited improved crowns, bridgework, etc. [Things like these have to be *seen* to be profitable and instructive. We have notes that would enable us to describe them at length, but feeling fully conscious that such descriptions are not profitable, we refrain, and merely mention the varied items, to let absentees know the unprofitableness of their absence. —Rep.]

Dr. McKellops exhibited a complete set of Miller's matrices, for use in filling compound cavities. They are elliptic springs, and hence easily wedged into and kept in place. In general, they seem to be made of bronze,—such the metal appears in color, etc.—but some are of steel, for use when filling with amalgams.

He gave a formula for gold solder that he highly recommended. In making it he always takes his gold from scraps of the same plate that is to be soldered, and with this in mind, the formula is as follows:

Gold,	89	parts.
Silver,	7	"
Copper,	4	"

Melt together and roll into plate.

He stated that to get the correct measure for a band to be placed around a tooth, he took a piece of pure silver wire, and pressed it tightly with pliers.

He also exhibited a small, neat and convenient mandrel for holding disks, and other small wheels for use in the lathe. It was much admired.

He also exhibited two scrapers for trimming the cervical margins of approximate cavities. They acted by drawing instead of pushing, and are found very convenient and useful for not only relieving the sharpness of the border before filling, but for correctly dressing down the gold, at the same place, after filling. They are now in the market, but we do not know what to call them.

On motion, the janitor of the building was paid five dollars, and the secretary fifteen.

Proceeded to the election of officers. Drs. H. A. Smith and G. W. Smith were appointed tellers. The result was as follows:

President, Dr. E. G. Betty.
First Vice-President, Dr. H. L. Moore.
Second " " Dr. J. R. Callahan.
Recording Secretary, Dr. A. G. Rose.
Corresponding Secretary, Dr. M. H. Fletcher.
Treasurer, Dr. Frank Hunter.

The President elect was conducted to the chair, and in a few well timed remarks, thanked the Association for the compliment, and promised to spare no effort to make the next meeting successful.

He inquired if there was further business; and none presenting, he announced the standing committees as follows:

Executive Committee, F. A. Hunter, H. L. Moore, N. S. Hoff.
Membership, G. W. Smith, H. A. Beamer, R. J. Corson.
Publication, J. Taft, Chas. Welch, A. O. Rawls.
Ethics, J. W. Jay, F. C. Runyan, J. F. Dennis.

The chair announced that it had formerly been the practice to appoint delegates to the American Dental Association, but of late years this duty is delegated to the Executive Committee, the delegates being authorized to fill vacancies from members who may be present.

Adjourned.

Editor's Specials.

"Write the Vision and make it plain."

MISSISSIPPI VALLEY ASSOCIATION.

After years of absence, it was our good fortune to be able to attend the meeting of the old society. It was claimed by those we heard refer to it, that the late meeting was more interesting than those next preceding it. Taken as a whole the meeting was good. Some good papers were read. Some able discussions were heard. Many useful practical appliances were exhibited. No doubt much was done in the way of sharpening up for future duty. "As iron sharpeneth iron"—you know. Personal contact—professional friction seems to be necessary in order to call out the best efforts of any profession or class of workers, whether the work be mental or physical.

This influence, sometimes spoken of as personal magnetism, is after all, the most profitable result of such meetings.

But during the years of our absence! Oh, what changes! "Backward! turn backward, O Time," on thy way; Give back our old comrades, if but for a day.

To the cry, "Friends of my youth, where are they? Echo answered, Where are they?" But echo, with all her volubility, refuses to account for the ravages of time on the early day membership of the Association. Think of Goddard, A. M. Leslie, Taylor, Somerby, Hamill, Griffith, Redman, A. M. Hunt, and many others, imparting life and energy to the meetings. These have been called home to the society that never adjourns, while others, bitten by the tooth of Time, have not the strength to spare for such scenes. We felt sad in missing McCullum, and Webster, and others. Still a few that we claimed as comrades in better days were on hand and active, and this cheered us more than we care to tell. Dr. Ulrey looks feeble and worn, but his thoughts ring clear as in former days. Dr. J. Taft looks about as he did—a little more grandfatherly, of course, and Dr. Berry, by the family record, is just the age he was, and looks it accordingly. Dr. G. W. Keely can't get old and has about quit trying to. These, and a few others kept us from a feeling of loneliness among the boys; and to show that even the boys have no ill feeling toward us, they voted unanimously to make us an honorary member of the Association for life, for which they have our most cordial thanks.

We hope the offer of a gold medal for the best essay submitted, if found worthy, will call out a goodly number of instructive papers. We do not know what disposition will be made of the papers not receiving the award, but if returned to their authors, they will probably come to light through the periodicals, and the profession will get the benefit of the thoughts and suggestions they contain. Of course the authors need not tell the public, nor even the editors, their history. If an abundance and variety of thought result from the offer, it would be unfortunate to have it lost to the profession. We hope there will be lively competition for the award among the talented and ambitious young brethren.

This offer of a medal is in accord with former action of the Association. At its meeting in 1855 a prize of one hundred dollars was given for a popular essay, and a fifty dollar prize was given for a set of extracting instruments, the Association keeping the copyright of the essay and returning the instruments to the manufacturer.

At a later date it offered a large prize for an essay on alveolar abscess, but no award was made, as the special committee did not regard any one among the papers offered as worthy of it. In addition to these, two members of the profession, Drs. S. S. White and W. H. Morgan, offered a prize of two hundred dollars for an essay on The Health of Dentists, the examination and award to be made by the Association, in accordance with the precedents it had established; but no award was made on this subject, for reasons similar to those governing in the alveolar abscess offer.

At the meeting in which the *Dental Register* was transferred to Dr. James Taylor, the Association resolved that it would, hereafter, use a liberal proportion of its funds in the way of awards and prizes, in order to stimulate the energies of those competent, so as to increase the rate of professional progress. Hence this proposed award is in consonance with both precedent and resolution, in a line that has probably resulted in profit to the profession and the public.

MADRIVER VALLEY SOCIETY.

Comparisons are odious; but still the members of "Little Madriver" have a habit of comparing their society with others, and they always decide in favor of their own fondling. As those who attend it unanimously regard it as the best of our local societies, we hope all others within reasonable bounds will come and see why they do so. They will all find a most cordial welcome.

Bear in mind that the Madriver Valley Society will meet at Dayton, May 18th, in the morning. We expected a program for this issue of the Journal, but the Executive officers have not yet furnished it, but you can each help to make a program, by at once writing a volunteer essay, which will doubtless be accepted, read and discussed. Hence, any subject you wish to hear about, can be brought before the society by the simple process above described. In proportion to its membership and the length of its sessions, this little society has been famous for the number of good papers presented to the profession. Let there be no backsliding; but let each one aim to make the coming meeting the best in the history of the society.

Be at the Philips House, Dayton, May 18th, by 10 o'clock, A.M.

DEATH OF DR. E. F. SAMPLE, OF DAYTON, OHIO.

Small as is the membership of the Madriver Valley Dental Society, we have the sad announcement to make that death has invaded our ranks since the last meeting. Some of us are advanced in years, and a call for such to go hence would not seem strange or surprising. Some appear to be in delicate health, and they have probably been expecting a call. But, "In such an hour as ye think not the Son of Man cometh," is a statement from the highest authority in the universe. And we witness such a providential coming, and realize that the statement is fully verified in the death of our friend and brother, Dr. E. F. Sample. He was young—in the very prime of life. A picture of manly vigor and health. He was calm and cheerful, totally free from prostrating passion or emotion. He was temperate in his habits of life, and prudent in all respects. He was happy in the enjoyment of his family and his friends. And humanly speaking, he was the member that was to live, and see us all placed at rest; but the Lord sees not as man sees, and death is no respecter of persons, and is said to love a shining mark ;—and Doctor Sample is *dead*.

The little bereaved family has our profound sympathy in its sorrow; but here the sorrow is not without hope, for there is one who is "the resurrection and the life."

Having known Dr. Sample from his boyhood, and having held with him the relations of preceptor and pupil, our feelings are more than usually astir. May we all be able to imitate his virtues in striving to follow his example.

For two or three months the health of Dr. S. had not been good, but he was improving and was in his office on duty all day Friday, Feb. 26th, ate supper as usual, retired at 9 P. M., slept till ten, awoke with severe pain in his head, and died about 1 A. M., the 27th, as is supposed, from cerebral apoplexy.

SANFORD C. BARNUM, D.D.S.

Died at the residence of his father at Monticello, N. Y., December 24th, 1885, Sanford C. Barnum, D.D.S., aged 47 years.

Dr. Barnum was born at Oakland, Sullivan County, N. Y., August 24th, 1838. At about 18 years of age he commenced the study of dentistry with Dr. J. W. Clowes of New York City, there he remained for some years, when he returned to Sullivan County and opened an office at Monticello, and during his practice there of nearly two years, after much experimenting, he discovered the rubber dam; appreciating fully its value after thoroughly testing it, he made it known to Dr. Clowes and through him presented it as a free gift to the dental profession. He shortly after resumed practice in New York, where his skill quickly brought its reward. Too close attention to business, however, soon developed a nervous disorder from which he was a very great sufferer for years, and was finally obliged to abandon his practice three years ago, when he subsequently entered a hospital for treatment, where he remained till a few months before his death. He was among the first graduates of the New York College of Dentistry.

Strictly honorable and upright in the ways of life, and although of a retiring disposition, his genial nature brought him many friends. *

Societies.

"Wherewith one may edify another."

Alabama Dental Association, Montgomery, Tuesday, April 13, 1886.

Iowa State Dental Society, Iowa City, Tuesday May 4, 1886.

Kansas State Dental Association, Topeka, Tuesday May 4, 1886.

Northern Ohio Dental Association, Cleveland, Wednesday, May 12, 1886.

Illinois State Dental Society, Rock Island, Tuesday, May 11, 1886.

Mad River Valley Dental Society, Dayton, Tuesday, May 18, 1886.

Kentucky State Dental Society, Louisville, Tuesday, June 1, 1886.

Indiana State Dental Association, Indianapolis, Tuesday, June 29, 1886.

Southern Dental Association, Nashville, Tenn., Tuesday, July 27, (instead of May 25), 1886.

"I TOLD YOU SO,"

SAID Mrs. McNinny, after hearing that the cow had eaten the grindstone. When the meeting at Minneapolis failed to select a place for the next session of the Am. Dental Association, the foresight of a seer was not needed to assure us of a discordant settlement of the matter.

But it is unfortunate that the idea of huckstering by our societies has been indulged. We are told that at Minneapolis only fifty-six old members were present. This is as was expected, and the result was that the business was mainly managed by novices. They were good members, but lacking in experience.

By going to one end of the earth the dentists at that end may join the Association, but when it comes back to the middle again, and especially if it goes to the other end, not many "end men" will follow.

If the Association is to be revived, so that it can be useful, it would better meet at accessible places, and have no side issues, such as excursions, suppers, boat-rides, base ball games or monkey shows, to distract attention. If it cannot meet for the sake of science and art, it is not worth while for it to meet. We can get up excursions and useless—injurious feasts at our option, without crippling an association for the promotion of science. It has been claimed that because it is the National Society, it ought to go all over the nation; but its national character should give it dignity enough to keep it at home, and let the nation come to it. As well might the supreme court go peddling over the country.

THE AMERICAN DENTAL ASSOCIATION.

WHERE SHALL THE NEXT MEETING BE HELD, CHICAGO OR SAN FRANCISCO?

At an informal meeting in Buffalo, in December, at which six members of the Executive Committee were present, a vote was taken resulting in five for Chicago, one for Buffalo. It was decided after the vote to leave the final decision and completion of arrangements with the Committee of Arrangements, they to be governed by circumstances in the final decision. Since more recently, a proposition to hold it in San Francisco has been made, it is deemed best to submit the question to the profession.

The reasons for going to California have already been so fully given in the article in the dental journals, and more recently in a circular letter, that it is unnecessary for me to take space to present them again. They read well and make us all feel like saying Go? *Why, of course!* But facts are hard things to knock against, and it will be found much easier for the majority of the dental profession to say to some other fellow, "Go!" than it will be to muster the money and spare the time to go himself. The rank and file of our profession are not rich men. The question of expense has to be considered by many.

A large per cent. are young men that need the meeting, and the Association needs them. How many will feel that they can spare the time and money necessary for so long a trip? Calculate a week to go, a week to return, the best of a week for the meeting, and two weeks to see California and the Great West, including points of interest on the route, and five weeks are gone. Fare from Chicago, round trip, $62.50. Meals and sleeper about $5 per day. Expenses $5 per day at lowest estimate at a time when the city and surrounding country are thronged with the Grand Army and thousands of strangers. Add to this, extra railroad and steamboat fare for all side trips to points of interest, and the extras that you can never plan for, and it is easy to see by all who have traveled much that $300 would be a *very* low estimate for the expense, besides at least five weeks of time. Those who have been to California all coincide in the statement that one can not see enough of California and the West to pay them for going without a greater expenditure of time and money than we have named. It is well known that July and August are the most disagreeable months in which to make the trip to California, and we see the country at its worst. These are the months when Californians get away if they can. Since learning the desire of some that the American Dental Association should be held in San Francisco, the California dental societies have courteously invited us, and we are sure their hospitality will be fully appreciated by all, but there are times when we can not afford to accept even hospitality. This is one. The association would lose too much. We could not hope for any large accession of new members that would be permanent or often meet with us from so great a distance, and we should lose many.

Chicago was selected on account of its being central, easily accessible from all parts of the country at low railroad rates, and of its having unsurpassed hotel accommodations, and cool summers. The fact that a hundred of the new members elected last year were western men and should be held, also entered into the decision. Your committee have been quietly planning and working since the last meeting to insure at our next the largest attendance and most successful meeting ever yet held, feeling that each meeting should be an advance upon the one that precedes in points of numbers and interest; that we ought not only to hold the new members gained last year, but that we should add as many more at our coming session. It is too soon to complete definite railroad arrangements, but if the decision is for Chicago, we expect to bring them within the reach of all.

At a meeting of the Chicago members of the American Dental Association, and of the Chicago Dental Society, called to ascertain the views of the profession here March 17th, the following resolution was adopted by a vote of twenty-seven out of thirty-two present:

Resolved, That it is the sense and desire of this body that the next meeting of the American Dental Association should be held in Chicago, and we extend to the Association a most cordial and hearty invitation to meet with us.

AN EXCURSION TO CALIFORNIA AFTER THE MEETING.

Your committee are assured by the railroad authorities that they can have equally as favorable rates in all respects for an excursion upon the close of the meeting, if any considerable number wish to go to California, as are promised for the Association. The committee will see that *no pains are spared* to make such an excursion a success, if enough signify their wish to go to warrant making the arrangements. Thus, none who wish to go will be deprived of seeing California at the reduced rates, while great numbers will not be deprived of attending the association because they cannot afford a trip to California. It is a serious question whether the society has a right to hold its meetings beyond the reach of so large a class. Let us remember that our association is a scientific body intended to reach and benefit *the great body of the profession* as far as possible.

There has been so much discussion of the whole subject in the committee and out, and the committee are at such distances from each other that it is impossible to get a united expression of views *in time for the journals*, as promised, hence, I submit this as an expression of a part of the committee. Am very sure that each member of the committee wishes to do only the very best thing for the association, and to carry out the wishes of its members, and your votes will show us what those are and greatly facilitate the work of the committee.

Please answer *promptly* and *definitely* by letter or postal the following questions:

In your judgment should the meeting be held in San Francisco or Chicago?

Do you expect to attend the meeting if held in San Francisco?

Do you expect to attend the meeting if held in Chicago?

If the meeting is held in Chicago, will you probably go to California after the meeting is over, if an excursion is decided upon?

Other excursions and attractions will be planned for as soon as place of meeting is decided.

J. N. Crouse, *Chairman* Ex. Com. & Com. of Arr.
2101 Michigan Ave., Chicago, Ill.

A Remedy for Toothache.—Boy—"What are you crying for, Sally?" Girl—"'Cos I got the toothache." Boy—"You go round to my grandmother; she 'ull tell yer what to do; she knows how to take hers out and put 'em back whenever she wants."—London *Fun*.

TO THE MEMBERS OF THE AMERICAN DENTAL ASSOCIATION—AND OTHER DENTISTS.

Desiring that you should have all the facts in my possession, bearing upon the question of a selection of time and place for the next meeting of the American Dental Association, I again address you upon the subject. Since the organization of the Executive Committee last year, there has never been a formal meeting of the committee. At the time of what is known as the Buffalo Conference, last Nov., it was found that a majority of the Executive Committee were present and so an informal meeting of those present was held and the matter of a place for our next meeting was discussed. The Secretary of the Committee stated that he had received urgent official letters of invitation for the Association to meet in Buffalo, from the Buffalo Dental Association and the 7th and 8th District Societies of N. Y. The Chairman objected to Buffalo, stating that in his opinion there was not sufficient hotel accommodations, and said that Chicago was the only proper place to hold the meeting. To this one member said he had spoken to a number of our leading members from Chicago and they had expressed themselves in opposition to our meeting there next time. To this the Chairman replied that if the Committee would put their feet down upon the idea of accepting any kind of reception or banquet, a thing which in his opinion, we ought now to do, there would be no objection to our meeting in Chicago. After some discussion an *informal* vote was taken; votes being cast for Buffalo, St. Louis and Chicago, though the latter had the greatest number. It was then agreed that the members of the Committee should ascertain all they could about railroad rates to and from various places that would be suitable for the meeting and correspond or have some future meeting of the committee for decision. Such is the record. After I had received the assurance, from agents of the transcontinental lines, that my efforts to get the Grand Army rates to San Francisco would probably meet with success, being in New York at the meeting of the Odontological Society, where, among a large body of dentists present, were many of our members, I began to tell them what rates we could have if we wished to have the meeting in San Francisco. I found there was much enthusiasm upon the subject and many at once declared they would go. "Well we ain't going all the same," exclaimed the Chairman, who was present arguing against the idea of going. I simply replied that I thought we should if the members wished to do so. Dr. C. then began complaining of me for talking about the matter at all, saying "just hold up now, and let the committee get together and decide this thing." He was told by myself and one other of the committee present that the matter was of sufficient importance to submit to the members for their judgment and that there was then an opportunity to consult with nearly fifty of our members. There the matter dropped. I had previously written to several of the Executive Committee and all from whom I had heard replied strongly favoring the idea of going. The Chairman did not answer my letter. I had made a formal application to the Transcontinental Pool for the Grand Army rates and privileges for us if we wished to avail ourselves of them. That was all. The pool disbanded without reaching action on my application. I then enlisted the services of a friend, Past Commander in Chief Vanderwort of the G. A. R., who is Special Agent of the Union Pacific Railway, in our behalf. and through him the rate and privilege was granted us provided we would hold our meeting the last week in July and which would certainly be the best time as you will see later on. I have the guarantee the railroads made and the Southern Pacific and Northern Pacific have endorsed it.

My previous circular gave you information with regard to rates from other points. The rate has not been definitely fixed east of points represented by St. Paul, Chicago, St. Louis, New Orleans, etc., beyond the fact that they will not exceed half-fare. When I sent you the last circular, it was suggested to me by all of the Committee of Arrangements except the Chairman, that I should send it out *officially* as Secretary; but, as what I had done had been simply as a member, with no personal end in view, I did not do so. I only sought to place information before you and was not anxious to parade my official title before you. The Chairman of the Committee hastened to inform you that it was your duty to address all correspondence on a subject he had not given you any information about, to him, as Chairman. You were requested not to "hamper the committee by giving a premature decision." As the committee had not taken any action in the matter except that a majority of them had declared in favor of going to California, I suspect that if that postal had read "Do not hamper the *Chairman* who desires we shall meet in Chicago" it would have stated the fact in the case a little plainer. In my former circular I stated that the California dental societies had invited us cordially.

In response to my circular of inquiry, every officer of the Association but one has replied favorably, and that one admits that "there is no doubt that we should have a large meeting." I gave you extracts from the letters of the others in my last circular. Six of the nine Executive Committee are in favor, and only one is understood to be decidedly opposed. Two of the three Committee of Arrangements are decidedly in favor. All of the Chairmen of Sections, but one, will be at San Francisco if we go, and that one is not quite certain yet about going, but he is decidedly opposed to Chicago. At Minneapolis half of the Chairmen of Sections were absent. Nearly 100 members have declared in favor of California. At Minneapolis only 56 old members were present. About 150 dentists who will all be members at San Francisco have already declared they shall be present, and every mail is swelling the number. Read what some of the members write in letters received since my last circular. Sec'y Harlan writes, "I am in favor of San Francisco if the larger number desire. *I am not in favor of Chicago this year.*" Treas'r Keeley writes, "Had we known all the facts when at Minneapolis, three-fourths of the members would have voted for San Francisco. We should not lose this opportunity." Dr. K. is not in favor of Chicago at all. Dr. Thompson of Executive Committee writes, "I am opposed to Chicago and in favor of California. Hope a good Kansas delegation will attend as is most likely." Dr. Friederichs of Executive Committee writes, "If we are to be the National Dental Association of this country, we should not be confined to any part of this Union in our meetings, but must take in the whole country. I do not see why anyone should object to our meeting in California. I think it will prove a big thing for us to meet there." Dr. Darby writes, "Put me down as in favor of San Francisco. A great many dentists who are not in the habit of attending will avail themselves of this opportunity." Dr.

Stockton writes, "I am in favor of San Francisco." Dr. Newby of St. Louis writes, "without a single exception, every dentist with whom I have spoken has favored San Francisco." President Barrett writes, "A National Society should represent the whole nation. Our Pacific States should be brought into the A. D. A." Dr. Bödecker writes, "Count me in for San Francisco." Drs. Butler, Bell and Horton of Cleveland each write, "I favor San Francisco." Dr. Noble of Washington writes, "The feeling this way is unanimous for San Francisco. There will be five or six new delegates from here." Dr. H. W. Morgan writes, "You may record my vote in favor of the meeting on the Pacific Coast. I cannot go myself but I do not desire to be in the way of others who can. Feel sure you will have an interesting trip." Dr. Fuller writes, "I hope the Association will meet in California." Dr. Cook writes, "Heartily approve of holding meeting in San Francisco." Dr. Leiter, "I say Amen! to the California meeting." Dr. Mariner, "would prefer San Francisco to any place on this continent." Dr. Gaylord, "By all means *let's go*." Dr. Patten, "I am for San Francisco to a man." Dr. A. E. Brown, of Chicago, "The proposition fully meets with my approval." Dr. Martin, Chicago, "Would like the California meeting better than any other." Dr. Harroun, "Never banked money that paid me so good interest as my trip to California." Dr. Knepper, "Heartily in favor." Dr. Moore, Dakota, "Go! it will be a grand trip." Dr. Case, "To hold the meeting in San Francisco will be the correct thing on general principle reasons. No doubt it will meet with the success it deserves." Dr. Field "prefers San Francisco." Dr. Holmes, "Think it due the dentists on the Pacific Coast that the A. D. A. should meet there." Dr. Doud writes, "I favor San Francisco." Dr. Brackett writes, "The plan you present has great merit in that it would contribute to make the Association more truly a National body." Dr. Parmly Brown, "I am in favor of California if the majority wish it." Dr. Gilmer, "The selection of San Francisco would be acceptable to me." Dr. Tibbetts, "I have spoken to a number of the boys here and they are all in favor of San Francisco." Dr. Fundenberg, "I vote for San Francisco and my vote cannot be changed." Dr. Butler, "Am still in favor of San Francisco." Dr. Waters, "In view of the general expression I do not say nay."

Only nine or ten members have sent unfavorable responses.

And so the record goes on from a much larger number of the members than the number of old members that were present at Minneapolis. Let us see what is the record from societies and states outside of the Association who will send delegates. Last year there were present from all New England only three persons. This year there will go to California not less than twenty-five, and every state in New England will send delegates. The N. E. Dental Association, which is next to the largest in the country will send a large delegation. The H. Society has just elected its full quota of delegates. From eight societies in New York come favorable reports. New Jersey is on the list. The President of the Pennsylvania Odontological and the Secretary of the State society write earnestly in favor and from several other societies in that state come reports of delegates. Maryland will send delegates. The District of Columbia will be well represented. Favorable letters have also come from the South, especially in South Carolina, Louisiana and Texas. Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Missouri, Iowa, Kansas, Nebraska, Dakota and Colorado, all will have delegates. California and Oregon with nearly seven hundred dentists *will have its full quota* of delegates. The reports from these distant sections are only just beginning to come in. Every dental society in the country will be furnished with credentials and instructed as to their right to representation in our Association. Now shall we say to our members on the Pacific coast who have kept up their membership and paid their dues year after year, we won't go? To that great body of our profession on the Pacific coast who want to unite with us, and who stand ready to receive us, as Dr. Atkinson says, "in a manner fully equal to that extended to us at London," we don't care for your membership? Shall we deny them the privilege of greeting and joining us, and not let them have the benefit of our counsel, but repel them? Shall we say to them, "we are *not* the American Dental Association of the country, we are the A. D. A. of a particular section? Shall those of us who possibly cannot go to California, be selfish enough to prevent the meeting from being held there? Many will not attend the meeting wherever held. It is hoped such will not prevent that which in their judgment is for the best interests of the Association, being done.

It is proposed that we meet in Chicago. We have met there twice and there are other cities like St. Louis and others of the west, where we have been invited that have a prior claim upon us. Besides, nearly one-half of our present members in Chicago have favored San Francisco and are opposed to Chicago. The President and many members of the Illinois State Society have written earnestly favoring San Francisco. Some of the most prominent of our members from Chicago, do not favor our meeting there this year. Among them may be mentioned Drs. Allport, Harlan, Brophy, Haskell, Talbot, Ames, Marshall, Griffin and others. Dr. Allport writes, "As between San Francisco and Chicago I am for the former. As between Chicago and 'Tophet' I don't care, for with the row that has been kicked up, the temperature of the two places would be about the same." It seems to me that those who remember the unpleasant episode which occurred among the Chicago dentists at Minneapolis, it would be most unwise to meet in Chicago this year. If it is not best to go to California let us go to St. Louis or some other western city, or to Buffalo, where we have been cordially invited, or some other eastern point. Dr. Crouse himself writes, under date of Feb. 22, "remember I have little personal preference, and that little is against having it in Chicago."

It is urged that by going far away from where we met last year we shall lose many of those we gained then. That is certainly not complimentary to those who joined us last year, and implies we must always meet near them. From none of our members have there come more urgent requests to go to California than from Minnesota, when we met, and the other western states, west of Illinois. The Secretary of the St. Louis Society writes, "The members of the St. Louis Dental Society will go as a body for San Francisco." Dr. Martindale writing for Minnesota, hopes "we shall go because it will establish the fact that we have no geographical bias." Vice President Smith of Minneapolis wrote, they would fill one car from there. Drs. Hunt, Kulp, Wilson and others from Iowa favor California, and so on all through the west, among the very ones who joined us last year.

It is proposed to have an excursion from Chicago to California after the meeting via the Northern Pacific. Is it likely that these members and delegates from the west who want to go to San Francisco will come way east to Chicago first and spend a week of their time there? Is it likely that the members and delegates from the northwest are coming to Chicago first? Will those from the south, from Louisiana and Texas, and who can go to California via the southern route, come way north to Chicago to join an excursion. Besides such a scheme would not get us to California until the last of August, when vacations usually expire and we have to hurry home. I would also call your attention to the following from the circular issued by the railroads with reference to the Grand Army rates and privileges extended to us. "Excursion tickets will not be sold to go west to San Francisco *via Portland, Oregon*, and return east via either of the other routes mentioned."

Great stress has been placed upon the matter of expense to deter you from going. This is a matter which you are all mathematicians enough to calculate for yourself. The opportunity is a great one and a man can make the expense great or small as he pleases. The hotel prices in California are about the same as in Eastern cities, say an average of $3.50 per day, and we shall have reduced rates. If one is hurried he can make the trip in three weeks time. Four weeks or longer can be profitably employed. The last week in July will be the best time for having the meeting because we shall then be through with our meeting and ready to participate in that grand ovation which is to be extended to the Grand Army the first week in August, and for which the State and city have secured nearly $200,000.00 with which to entertain them. It will be an ovation and series of receptions such as has never been known on this continent, and will alone be worth the trip to California. To get out to California on an excursion the latter part of August, which is not possible at the same rates and with the same privileges as earlier, would be to find the people tired out, little interested in us, and the facilities for getting about and seeing things at the low rates, not then what they will be earlier. Certainly the months of July and August are the only ones when the great body of dentists can afford to be away from their offices. It is not hot in San Francisco at that time for the people wear the same clothing the year round and you will need outside garments every evening.

After a careful study of the matter, and extended correspondence, covering all sections of the country, I am convinced that it would be most wise for us to hold our next meeting in San Francisco, the last week in July. I hope no one will think there are any personal difference among the majority of the officers and Executive Committee who favor California for the next meeting, and the small minority who do not. We are all on the best of terms. Vote for any place you please. You are not obliged to choose either San Francisco or Chicago. In voting for a place you do not thereby commit yourself to going there any more than you have in past years. At the present date, nearly a hundred members have indicated their preference for San Francisco, and there is no doubt but there will be as many delegates as last year if we meet there.

Respectfully, A. M. Dudley.

Salem, Mass.

ILLINOIS STATE DENTAL SOCIETY.

The twenty-second annual meeting will be held at Rock Island, Illinois, beginning Tuesday, May 11, 1886, and continuing four days. Dentists in this and adjoining States are cordially invited to attend.

J. W. Wassall, Secretary,
208 Dearborn Avenue, Chicago.

CHICAGO COLLEGE OF DENTAL SURGEONS.

The Board of Directors of the Chicago College of Dental Surgery has decided to establish a Spring Course of Lectures, beginning Tuesday, April 6, 1886—the week following Commencement Day — and terminating the 15th of the following June. The Spring course is preliminary to the regular winter course.

OHIO COLLEGE OF DENTAL SURGERY.

The fortieth annual commencement took place at College Hall, on the evening of Wednesday, March 3, 1886. Happening within the same week was the meeting of the Mississippi Valley Dental Association, so that Cincinnati at that time contained an unusual number of dentists. College Hall was therefore, well filled with these and the friends of the students, and the exercises were of a character highly pleasing to all. The music was furnished by Currier's Orchestra. Dr. Geo. W. Keely, President of the Board of Trustees, conferred the degrees upon the graduates and followed with an address, in which he reminded the students, that in each succeeding commencement they appear before people who will require of them better operations, and urging each one above all things to make his life one of study, as the future dentist must in every sense be a scientific man.

The prizes, given by the faculty, were then presented by the Dean, H. A. Smith. The first, a prize of a gold medal for the best general examination, was awarded to C. E. Esterly, of Kansas, while H. L. Bryant and C. B. Meckel were honorably mentioned. The second was a gold medal, for the best attainments in operative dentistry, awarded to J. C. Corcoran, of Minnesota. The third, a gold medal given for the best specimen of artificial dentistry was awarded to F. T. Struckman, of Ohio. The medals were beautiful in design and bore the inscription, "*Qui non profecit, defecit.*" The Rev. John Rusk then delivered an address teeming with good advice for the young dentists. At the close, C. E. Esterly gave one of the best valedictories we have heard.

Immediately after the Commencement exercises, the Alumni Banquet was held at the Hotel Emery. Nearly one hundred persons were seated in the brilliantly lighted room, and the dinner was all that a pronounced epicure could wish. After dinner the toasts were given and some pleasant little speeches made. Dr. McKellops, of St. Louis, in response to a call recited the poem "Beautiful Water." Dr. R. E. Taylor entertained the company with "Happy to-night, Boys" in a splendid tenor. Dr. Keely, Dr. Rawls, Prof. Wright, Dr. Leslie and Prof. Knight all responded, and indeed Prof. H. A. Smith, who presided, spared no one but called upon each to at least apologize for being present. The students in turn entertained the professors with some of their college songs and with these pleasant recollections the banquet ended.

The session of the Ohio College of Dental Surgery, just closed, was an unusually successful one, with a large number of matriculates, seventeen of whom received the degree of Doctor of Dental Surgery.

Following is a list of the graduates:

R. E. Wyatt, Ohio; J. C. Corcoran, Minnesota; E. G. Logan, Ohio; F. T. Struckman, Ohio; C. B. Meckel, Indiana; C. F. Materne, New York; W. M. Hart, Ohio; E. B. Swift, Ohio; C. E. Esterly, Kansas; A. F. Muenter, Germany; M. H. Guthridge, Ohio; H. L. Bryant, Minnesota; W. B. Gordon, Indiana; L. B. Moore, Ohio; J. Q. Neptune, Ohio; C. M. Doss, Illinois; H. M. Howard, Ohio.

H. T. S.

INDIANA DENTAL COLLEGE.

The seventh annual commencement exercises took place Wednesday, March 3, 1886, in the hall of the college, Indianapolis.

After an invocation by Rev. M. L. Haines, Professor J. N. Hurty delivered an address on behalf of the faculty, his subject being "Teachings from the Life and Labors of Carl Wilhelm Scheele," the great Swedish chemist.

The diplomas were then delivered by President Heiskell to the following graduates: L. L. Clark, Sunderland, Mass.; A. L. Jones, Princeton, Ind.; E. E. Jones, Monticello, Ills.; O. S. Lynn, Bourbon, Ind.; J. E. Montgomery, Tarentum, Penn.; J. H. Palin, Bristol, Ind.; A. S. Price, Danville, Ky.; W. H. Rowand, Richwood, Ohio; R. M. Smiley, Washington, Ind.; E. E. Stewart, College Corner, Ohio; W. N. Wilson, Richmond, Ind.

The college, since its organization, has had one hundred and eighty-two matriculants.

Dr. J. H. Palin delivered the valedictory, after which the students, professors and a number of invited guests repaired to John Schaffner's, where they seated themselves at a long table where the good cheer was sandwiched with toasts and sallies of wit, Dr. Heiskell filling the position of toast-master. Responses were made by Drs. Hurty, Cravens, Kirk, Henthorne, Brayton, Oliver, Bodine and others, and the exercises concluded with some rare singing by the students. The bill of fare printed on Japanese bibulous paper was something unique, and its witty menu was keenly relished.

MISSOURI DENTAL COLLEGE.

The twentieth annual commencement of the Missouri Dental College was held in connection with that of the St. Louis Medical

College, at Memorial Hall, St. Louis, Mo., on Thursday evening, March 4th, 1886.

The address to the graduates was delivered by H. H. Mudd, M. D. The valedictory by Prof. W. L. Fischel.

The number of matriculates for the session was twenty-eight.

The degree of D.D.S. was conferred by the Dean, Prof. H. H. Mudd, M.D., upon the following graduates:

Alexander Sanders Halstead, Illinois; William Way Hart, Illinois; Thomas E. Heatherly, Illinois; George Larkin Mack, Missouri; Arthur Jay McDonald, Missouri; Henry Louis McKellops, Missouri; Rheinhard Rembe, Missouri; Charles Sumina, Missouri.

A. H. F.

DENTAL DEPARTMENT OF THE UNIVERSITY OF MARYLAND.

The annual commencement of the University of Maryland, Dental Department, in connection with the seventy-ninth annual session of the University School of Medicine, was held at the Academy of Music, Baltimore, on Wednesday, March 17th, 1886. The reading of the Mandamus and the announcement of the graduates by Professor Ferdinand J. S. Gorgas, Dean. The degree of D.D.S., was conferred by Hon. S. Teackle Wallis, LLD., Provost of the University, upon the following gentlemen, all of whom had attended two full sessions of five months each in separate years:

Emil Amend, Germany; Frank A. Baden, Maryland; Horace E. Basehore, Pennsylvania; Emile Brugeille, France; Thomas W. Bookhart, South Carolina; William W. Bruce, West Virginia; Oscar J. Campbell, Virginia; Augustus H. Chafee, South Carolina; John S. Diehl, Pennsylvania; Joseph G. Emerson, Brazil, S. Am.; Charles Luff Furman, New York; Elly A. Gasque, South Carolina; A. H. Greenawalt, D.D.S., Pennsylvania; Charles W. Hartwig, Maryland; John H. Hoffman, Virginia; G. Allen Huggins, South Carolina; William H. Lowell, Pennsylvania; Frank H. Lumsden, Maryland; Lloyd T. Macgill, Jr., Maryland; Wilfred A. Pleasants, Virginia; W. Eppes Proctor, Jr., Virginia; Ralph C. Purnell, Maryland; James M. Riley, North Carolina; Lewis N. Shields, Texas; Benjamin F. Sims, South Carolina; Frank E. Slocum, New York; Joseph A. Wall, Pennsylvania.

The University prize, gold medal, for the highest number of votes at the final examination, was awarded to William E. Proctor, Jr., of Virginia. Honorable mention was awarded to Wilfred A. Pleasants, of Virginia. The address to the graduates was delivered by Col. William Allen, President of McDonough Institute.

The number of matriculates for the session of 1885–86, was *ninety-one.* Although the number of matriculates for the session was larger than ever before, the number of graduates is smaller, on account of a strict compliance with the *two session rule*, as a requisite for graduation, no less than *twenty-two* having been refused, who desired to graduate in one session, on 5 years or more of practice.

The annual meeting of the Alumni Association of the Dental Department, University of Maryland, was held at the Howard House, Thursday evening, March 18th. Dr. Charles L. Steel, of Virginia, presided. Prof. F. J. S. Gorgas addressed the meeting. Members of class of 1886 and a number of the graduates of other colleges were elected members. The following officers were elected for ensuing year: President, Dr. R. D. Dodson, Pennsylvania; Vice-President, Dr. J. Fournien, N. Y.; Secretary, Dr. J. S. Kloeber, of Virginia; Treasurer, Dr. J. H. Davis, of Maryland. A banquet followed at which many speeches were made.

Books and Pamphlets.

DENTAL MEDICINE,—A manual of Dental Materia Medica and Therapeutics, for Practitioners and Students,—By FERDINAND J. S. GORGAS, A.M., M.D., D.D.S, etc. Second edition revised and enlarged, clo. 379 pages $3.25. Philadelphia: P. Blackiston, Son & Co., 1885. For sale by Brown, Eager & Hull, Toledo.

That a second edition of this most excellent work has been called for inside of a year is the highest commendation that could be given it. This edition includes in seventy added pages, "a chapter on Inflammation, with special reference to the Mucous Membrane of the Mouth; a Synopsis of the Treatment, with additions, of Affections of the Oral Cavity; the results of recent investigations into the properties of anæsthetic agents; the Methods of prominent practitioners for the employment of medicinal agents in the treatment of affections for which such agents are specially applicable. To the Dental Materia Medica, such agents as Cocaine, Peroxide of Hydrogen, Iodide of Zinc, Chlorides of certain metals, Boracic and other Acids, Duquesne's Aconite, Papain, Resorcin, Syrup of Lacto-phosphate of Lime, Eugenol, Jamaica Dogwood, Glyceroberates of Calcium and Sodium, Nephalin, etc., etc., etc., have been added; also a number of formulæ, and an Index to Dental Diseases."

The success of this book shows that the time has come for treatises on the various branches of dental science instead of the bulky volumes heretofore issued, in which the attempt is made to cover the whole ground in one work.

LETTER OF A MOTHER TO MOTHERS ON CHILDREN'S TEETH,—By MRS. M. W. J. 3d edition revised and enlarged. Price 25 cents, 106 pages. Philadelphia: Welch Dental Co., 1885.

The 2d edition of this useful pamphlet, was noticed in the June No. 1885 of the JOURNAL and we presume the 3rd edition may be had in quantities at the prices then quoted.

ANNOUNCEMENT OF THE COLLEGE OF DENTISTRY of the University of California. 5th Session. March 1st to Nov. 30th, 1886. C. L. GODDARD, Dean, 131 Post St., San Francisco.

DISEASE—Read at the May '83 meeting of the Dental Society of the State of New York. 8 pages.

REPRODUCTION OF TISSUE BY SPONGE-GRAFTING—(Whitney Memorial Prize Essay). CORRESPONDENCE—Read before the Dental Society of the State of New York, May, '85.

Both of the above pamphlets are by our distinguished friend Dr. W. H. Atkinson of New York, and are well worth study by any who can separate the intelligible from the Atkinsonian.

SCIENTIFIC APPLICATION OF ARTIFICIAL DENTURES—By C. H. LAND, Detroit, Mich. Cloth 45 pages.

This little work contains Dr. Land's ideas on the subject which have been before the readers of the journals in society reports, also Hints for the Laboratory, rightly claimed by Thos. Fletcher, F. C. S., in our February number.

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. VI. MAY 1, 1886. No. 5.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

ORAL DISEASES—NECROSIS OF THE LOWER JAW.

BY J. M. MARTIN, M.D.,
LECTURER ON ORAL DISEASES IN THE DENTAL DEPARTMENT, UNIVERSITY OF MICHIGAN.

[Read before the Michigan State Dental Association at Ann Arbor, Michigan, March 17th, 1886.]

THE hastily prepared paper which I shall present this evening is not intended for a complete monograph on diseases of the mouth, or on any branch of them; but intended to present only a few practical points on the subject and with especial reference to a case which I shall present in this paper.

With the exception of diseases of the teeth, there is no class of affections so generally neglected by both physicians and dentists as those of the mouth. I have, for this reason, noted a few points with reference to those diseases that I hope will be of interest to you as practical dentists. Of course I cannot do much in a brief hour in this field, when it takes sixty or more lectures to treat the subject in the way I present it to the dental students. This is a field small in area, but rich in pathological changes, that are not only of great importance locally, but in which deviations from the normal standard may produce serious constitutional disturbances. It is not so much what goeth into the mouth, or cometh out of the mouth, as what takes place in the mouth that interests us most, professionally. First, any interference with the act of mastication soon overloads us with a mass of raw material that cannot be utilized for building and repairing except at a great disadvantage. If food is not properly masticated, it passes along the digestive tract, imposing more work upon the other organs and often results in derangements of a serious character that are particularly noticeable in those who are debilitated from age or other causes. Derangements of digestion are exceedingly common, and no small number is caused by insufficient mastication due to disease in and about the organs of mastication.

Again, derangements of dentition may result in many abnormalities ranging from slight irritability or diarrhœa to convulsions, emaciation, and death. The process of dentition is a *normal physiological process*, but deviations from this standard are numerous owing to the many modifiers at work which interfere with that process in the form of bad hygienic surroundings, *too early* administration of solid food, and many others. When the child arrives at a certain age, almost every illness is referred either directly or indirectly to dentition. The mother is perhaps feeding her babe meat, bread, potatoes, and other solid food before its organs are able to digest and assimilate them; and they act as irritants, producing derangements which, of course, in her estimation, are due to "cutting teeth," as she terms it. How common are such expressions as these, "the baby is cross now, it is getting ready to cut teeth," or "is cutting teeth," and they are *partially* true; but dentition should not be the only hiding place for physicians and dentists.

The temporary teeth are usually erupted between the sixth and thirtieth month, beginning with the central incisors; and physicians and dentists too often diagnose dentition as the cause of most derangements of that period, and far too often recommend lancing of the gums, not knowing what ought to be done. Well, lancing of the gums is a proper procedure when indicated and at the proper time; but often it is done too early and more harm than good results; for example, if the gum over a tooth is lanced too early—before the tooth is ready to be erupted—a cicatrix forms over the tooth, and it being firmer than the original structure, there is more disturbance when the tooth is erupted than there would have been had lancing not been performed. When the gums are tense and congested, and by examination the tooth can be felt beneath, then is the time to assist nature and relieve congestion by lancing the gum. Another mistake sometimes made is in not recognizing an inflammation of the root or base of a tooth when there are no external signs of inflammation at the apex of the gums; if the inflammation is at the root of the tooth, due to backward pressure by the structure in front, then the inflammatory signs are at the base of the gum and not at the apex, and instead of the child experiencing relief by gradual pressure forcing the blood from the tissues over the tooth, there will be an actual increase of pain.

Another great source of error is in mistaking inflammation for neuralgia, and vice versa; and in not discovering the cause or causes of neuralgia, and still more those of odontalgia; there are no less than twenty causes of odontalgia or toohache. Among them are dental caries, periostitis, caries and necrosis of the maxillæ; abscesses of teeth, gums, jaws, and surrounding structures; inflammation of gums, dental pulp, and surrounding structures; death and decomposition of dental pulp; ossification of dental pulp; many different kinds of tumors of the teeth, gums, or jaws; and many cases from reflex action due to derangements of digestion and many other causes. A plug of hard wax in the ear has been known to cause the most severe form of toothache by reflex action. It is easy to see how fruitless the curative treatment would be in most of these cases without first gaining a knowledge of the cause of pain.

Again, diseases of the teeth may produce diseases of the jaws; as periostitis, caries, necrosis, and abscesses of the gums or jaws, diseases of the antrum, as abscess, dropsy, etc., diseases of the salivary glands, tonsils, cheeks, throat, nose, ear, and a long train of general disturbances, as neuralgias, blood poisoning, and derangements of digestion. Many times disease of the teeth has excited neuralgias of the most varied and peculiar form. The reflex actions in the way of producing tetanus, and trismus or lock-jaw, are wonderful. There are many cases on record where lock-jaw has been produced by the irritation from a diseased tooth, by reflex action. Not long since, a prominent Chicago dentist reported a case where a diseased tooth, whenever irritated, caused severe tetanic contractions of different muscles of the body; there are many similar cases incorporated in oral literature. Many cases of convulsions have been traced to diseased teeth; I do not refer here to the eruptive period, but to the disease of teeth of adults. On the other hand, many diseases predispose or cause directly disease of the oral structures, as syphillis, continued and eruptive fevers, etc.; in fact, anything that alters the secretions of the mouth or alimentary canal generally produces a morbid state of the secretions that acts injuriously upon the dental tissues.

In this locality, there are certainly many changes from the normal; there are many abnormalities and diseases of the gums, as tumid gums, hypertrophied and atrophied gums; alveo-dental abscesses, abscesses of the antrum and other structures; inflammations of all the parts; tumors of all the parts, as polypoid, fungoid, fibroid, sarcoma, and cancers; deformities of the teeth, gums, jaws and palate; diseases and deformities of the tongue, lips, and throat by the score; and many other diseases too numerous to mention in this short paper. All of these diseases, with their many complications, make this field of study not only an exceedingly interesting one, but a very important one, from its local importance and also from its bearing on the general economy. With this long line of diseases, the numerous pathological changes and the exceedingly complex anatomy of the mouth; who can reasonably say that the dentist has not a very interesting and important field of study? Without further remarks in a general way, I wish to call your attention to a case of considerable interest; a case of necrosis of the lower jaw with abscess near the angle.

The patient, Louis Hagberg, aged 23, was born in Sweden, where he lived until 1883, when he came to America, arriving here in that year in May; he has lived in and about Muskegon, Mich., since his arrival, working in the saw mills in the summer, and in the lumber camps in the winter. The patient's father and mother are both living and well. The patient was never ill before coming to this country, and since his arrival has been well until last July (1885), with the exception of a slight attack of malarial fever the first year in America, which continued two weeks, but was not severe. He is of average size and light complexion, and, as you see him at present, is well developed and rugged, much changed from the appearance he presented when he applied for treatment.

The history of the recent trouble is as follows: The 10th of July last (1885), after eating dinner, the patient complained of pain in the region of the right molars of the lower maxilla, and supposed he had toothache, as he termed it; the pain continued during the afternoon, and at night the right side of the face began to swell over the lower maxilla; pain and swelling increased for three days, when the face was greatly swollen and distorted, the teeth of the lower jaw began to loosen, and at the end of a week, three of the teeth had dropped out, two on the left side (the lateral incisor and first bicuspid) and one on the right side (the first bicuspid) and the rest of the teeth of the lower maxilla were so loose that by gravity alone they would tip inward or outward, or from side to side, according to his position, for the disease at this time had extended to the left side. At the expiration of three days, pain was very severe and swelling so great that he could not open his mouth. He then consulted a physician who advised the use of a poultice locally and gave him some general remedy; the poultice was applied on the right side and a carious molar extracted from that side; the swelling was soon reduced. Two days later the swelling was nearly gone from the right side, but the left side was greatly swollen; the swelling having extended around the jaw to that side; the poultice was applied to the left side but did not accomplish the desired end—the swelling was not reduced. During this time the gums were much swollen, spongy, and very sensitive. The pain was almost unbearable for three weeks, the patient suffered so much that during these three weeks he could not sleep except for a few minutes at a time; he was somewhat delirious at times and became so reduced at the end of the third week from loss of sleep and severe pain that he could not walk, and it was with difficulty that he could stand alone. During this time he was obliged to live on liquid food, as he could not open his mouth. Suppuration having been well established at the end of the third week and many abscesses formed, an opening occurred on the right side near the back molar and considerable pus escaped; several other openings soon occurred in different parts of the jaw and pus flowed freely from all of them with an exceedingly offensive odor. As soon as the pus was evacuated all pain ceased, but profuse suppuration continued; and while the patient was free from pain and could procure the necessary sleep as far as pain was concerned, he was being exhausted daily by the profuse suppuration; and his mouth was so often filled with the vile pus and other secretions that they were a constant source of irritation. During this profuse suppuration, the odor was so bad that no one could stay in the room with him. During this time he called and consulted several physicians and a dentist; two more teeth were extracted a month after the first was extracted, and many general and local remedies were used; the patient was slightly improved generally and several pieces of necrosed bone were extracted and others came away; he was treated until November last, when he was advised by a dentist in Muskegon to come to Ann Arbor, where he could have the advantages of a good hospital.

The patient came to the hospital on November 6th, pale and much reduced, with a large, hard swelling on the left side of the face, over the muscles of mastication; there were several sinuses leading to necrosed bone of the lower jaw, from which considerable pus was flowing. I first saw the patient on December 3d; he was at that time, pale, weak, with cachectic appearance as if suffering from malignant disease; four sinuses led to necrosed bone, and the swelling was so great on the left side that he could not open his mouth; it extended up to the temporal region, down on the neck, back of the ear and to the mouth, and was about as hard as a bony tumor, except in the centre where it was slightly less firm but scarcely soft enough to indicate the presence of pus. The tumor could be slightly moved independently of the jaws, proving it was not a bony or cartilaginous growth attached to the jaws. One sinus opposite the left back molar led back toward the centre of the growth for two inches, from which a small amount of pus flowed, the flow was increased by pressure on the less firm central part of the tumor, thus proving the presence of pus near the angle of the jaw. Deciding with Drs. Taft and Watling that there was pent up pus acting as an irritant, on December 4th I enlarged the sinus leading to the supposed centre of suppuration with a bistoury and grooved director and put in a tent; the flow of pus was slightly increased, but drainage was incomplete as the pus was obliged to run up hill while the patient was lying down, and the pressure of the tumor was so great as to close the sinus without the tent, and give the patient severe pain with the tent in the sinus, I washed out the cavity with antiseptics, but owing to the nature of the opening and surrounding structures, it was as far from being successful as was the drainage. On December 17th the patient was gradually growing weaker, the cachectic state more pronounced, and was also showing signs of blood poisoning; the swelling at this time was slightly less firm in the centre but growing larger. As drainage was incomplete from the internal opening, for reasons mentioned above, I considered it best to open freely externally, realizing, however, the prejudice against external openings in this region. Professor Taft agreed with me in that course, and in his presence, I made a free incision into the centre of the tumor near the angle of the jaw, close to, and parallel with the infra-maxillary nerve, considerable pus with an offensive odor, was evacuated, the parts cleansed, and warm flax seed meal poultices applied for forty-eight hours, when the acute sensitiveness was gone; the parts were then explored with a probe and a small amount of dead bone discovered near the angle of the jaw, but not yet separated; the pus cavity was found to be of irregular shape extending among the muscles of mastication. By this external opening, *free drainage*, one of the two great indications for treating abscess was met, and the other, *cleanliness*, obtained by injecting a solution of carbolic acid and iodine. (A solution of 1-100 of the first, 6 parts to 1 part iodine, gradually increasing the amount of iodine.) Suppuration was free for a few days, but gradually diminished until July 15th, when a small piece of dead bone separated and was removed, after which the suppuration rapidly grew less and the sinus began to close from the bottom, stronger injections were then used. On February 13th the sinuses were entirely closed externally and internally, the patient could open his mouth freely and masticate his food, the remaining teeth in the lower jaw had become firm in their sockets. As to general treatment, the patient, when I first saw him, being much debilitated, without appetite and bowels constipated, I gave him a non-debilitating laxative composed of aloes, nux vomica, and hyosciamus at night, iron tonics after meals, bitter tonics before meals, and to hasten the removal of the large and firm deposit of plastic matter, iodide of potassium 10 grs and bichloride of mercury 1-16 gr. after each meal. He began to improve the next day after opening the abscess externally and has gradually improved since. A few weeks ago he was rapidly approaching death, while to-night, as you see him before you, he is a well and robust young man, a picture of perfect health. For more than a month, he has been working at manual labor about the hospital, with only a slight scar as a reminder of the serious trouble that once threatened his life.

The question naturally arises, what was the cause of this severe inflammation? We know that the causes of periostitis and necrosis are, in general, diseased teeth, phosphorous poisoning, syphilis, eruptive fever, excessive use of mercury, injuries, etc., but as to the causation in this case it is difficult to decide, unless it was diseased teeth, as all of the teeth extracted were found to be carious; but it is very rarely that carious teeth cause so violent a form of periostitis, for a severe periostitis which became general was the cause of the extensive suppuration and necrosis. It was not caused by mercury, for he had taken no medicine in more than seven months, and again mercurial necrosis is accompanied by greater destruction of the soft parts about the mouth. It is not phosphorus poisoning which it resembled in many of its characteristics, as the patient was never near phosphorus works, and never used *matches for toothpicks.* The patient gives no history of syphilis, after thorough questioning, and has no other signs of that much dreaded disease. If the patient had been recovering from scarlet fever, small pox, or any other eruptive disease, it would be reasonable to conclude that the eruptive fever was the cause, but no such history exists. The hard swelling, of course, was due to a deposit of plastic matter as the result of a long continued inflammation kept up by the presence of dead bone and pus. A case in some respects similar is reported in the *American Journal of Medical Science*, for 1855, page 126, by Dr. G. R. Henry, of Burlington, Iowa; the case began April 2d, 1854. The patient, a boy, of healthy parentage, always had good health till the October previous, when toothache began in the first left lower molar, and an alveo-dental abscess formed, but was not treated, the tooth was not removed, and there was a fetid discharge from about the tooth; there was a swelling over the jaw which gradually increased to a tumor resembling an encephaloid cancer, examination proved it not to be; several sinuses formed, suppuration was profuse, and the patient greatly reduced. A large part of the left side of the lower jaw became necrosed, dead bone separated, and the patient recovered. Erichsen, the famous English surgeon, in speaking of the causes of necrosis, in his excellent work on Surgery, says, in Vol. II, p. 459 (1881 edition), "I have, however, seen the disease (speaking of the necrosis of the lower jaw) occur in otherwise healthy persons without any assignable cause, in this way, I have seen the whole of the alveolar process of the upper jaw exfoliate in a young lady otherwise perfectly healthy; and I have several times had occasion to remove large portions of the lower jaw—in one case, more than half of the bone for necrosis that could not be referred to any assignable cause. The disease begins with a deeply seated pain, resembling inveterate toothache, which nothing will allay; the gums become swollen; teeth loosen and drop out; pus wells up from the alveoli; abscesses inside of the mouth and at the angle of the jaw form, and fistulous openings through which dead bone can be felt with a probe. The patient's health suffers greatly; more than in necrosis generally, doubtless in consequence of the patient swallowing so much of the pus from the dead bone."

This positive statement, coming from so eminent a surgeon as Dr. Erichsen assures us that necrosis of the lower jaw may come from causes that cannot be discovered. This is of importance to members of the dental profession, who are often unjustly accused of producing diseases with which they had no connection whatever.

It might not be out of place here to say a few words with reference to treatment of necrosis of the lower jaw. The treatment naturally divides itself into preventive and curative.

In all such cases, the question presents itself: Could this disease have been so modified that these serious destructive results could have been prevented? It should always be remembered that in the early stages, where there is heat, swelling, redness, a deep pain in the region of the lower jaw, and a general feverish state, that we have an active inflammation of a rapidly destructive nature to deal with; a periostitis generally—sometimes, more rarely, an osteitis, and sometimes both, and it should be combatted by active antiphlogistic remedies early and *persistently*, for, as Dr. Heath, in his standard work on "Diseases of the Jaws," says: "Such an inflammation may make necrosis of the lower jaw inevitable within a short time, and sometimes within a few hours."

The plan of treatment that I would suggest after consulting many authorities is as follows: If seen in the early active stage, give a good brisk cathartic, say 6 to 10 grs. of calomel or blue mass, followed in from four to eight hours by a large dose of saline cathartic, well diluted; follow this by 10 to 15 grs. Dover's powder or equivalent of some other opiate, to allay all pain, and repeat the dose as often as needed. If the pulse is hard, active, and the skin hot and dry, give drop doses of tinc. aconite every half hour in water until the skin is moist and the action of the heart is modified. By the action of these remedies, the blood is diverted from the part, the pain checked, the irritation quieted, the force of the heart modified, and the general temparature lowered; in other words, the part put at rest, which is the great essential in inflammation wherever located. It is of the utmost importance to keep the bowels active wherever there is inflammation about the head or face, for by calling the blood by brisk cathartics to the 25 or 30 feet of intestines, it is diverted from the head. Scarify the gums by free incisions down to the bone for two reasons: 1st, local blood-letting relieves the blood pressure, and 2d, it gives free vent to any pus that may collect under the periosteum, thus preventing extensive separation of the periosteum and extensive necrosis in many cases; the gums may be painted with tinct. iodine, hot fomentations applied over the swollen parts, and similar remedies. The treatment thus far is to combat periostitis and osteitis, and to prevent necrosis, caries, or abscess, which are the results of continued inflammation.

Whenever necrosis of the lower jaw is discovered, the best method to pursue, according to most British and American surgeons, is to meet indications generally and locally until the necrosed bone is separated from the living bone and then assist nature in getting rid of the irritant by enlarging the opening and removing the sequestrum or sequestra, as the case may be, avoiding injury to the large blood vessels and nerves in the removal.

The indications to be met generally are with supporting remedies, as iron and bitter tonics; and in specific cases, alteratives; without alteratives in specific cases, the patient cannot be cured, but with them, syphilis yields promptly.

The suppuration being profuse, the patient, in many cases, is rapidly debilitated, and nourishing food, tonics, and sometimes stimulants, are plainly indicated to assist Nature by supporting her. In these cases the supporting powers of quinine cannot be over-estimated. Locally, the sinuses should be cleaned by stimulating, alterative, or astringent injections as indicated, as solutions of iodine, listerine, peroxide of hydrogen, carbolic acid, etc., and the mouth should be cleaned often with solutions of permanganate of potash, listerine, etc., etc. As a rule, we cannot improve upon Nature's methods, and our duties as physicians and dentists are to discover Nature's methods and to imitate her and assist her by removing all obstacles to her processes.

COMPLICATIONS IN DIAGNOSIS.

BY DR. HIRAM DE PUY, PITTSBURGH, PA.

[Read before the Odontological Society of Western Pennsylvania.]

Diagnosis is the science of determining disease. By *diagnostic symptoms* we understand symptoms of certain complaints, the presence of which indicate some feature, or the active presence of that special ailment.

Symptomatology is the science of the phenomena of significant morbid manifestations in the study of disease. The symptomatology of a case must be understood before a diagnosis can be made, hence the inferior relation of the former to the latter term. One is the collected evidence, the other the verdict. A diagnosis cannot always be formed from regular symptoms. We cannot decide mathematically a disease from the number of symptoms present. Frequently many suggestive symptoms, tending in the way of a certain disease, are concomitant only with some remote cause of an entirely different nature, and instead of being valuable, are misleading.

Generally speaking before diagnosing anything but the simplest disorders, the ideas of the patient should be carefully considered. We should know the sex, age, temperament, constitutional tendencies, tongue, pulse, habits, and the perversion of any of the natural functions. We cannot omit even features most commonplace in tracing the history of our case. We should be most candid in employing these means. I regret to say that with some there is a tendency to make their patients' symptoms suit their line of reasoning, and with a series of technicalities, they form some very abstruse conclusions, sometimes too deep to be at all comprehended. If the scientists in medicine, and dentistry as well included, would search first for tangible facts, and then embellish them with epologue theories, if necessary, error and diverse doctrines would not be so common; and that branch which follows diagnosis in the regular order, viz.: treatment, would be more uniform in decided results, our therapeutic agents would be simplified, and operate more in one direction.

A diagnostician, if the dentists' claim merits such distinction, must be a scholar well versed in general pathology, and constantly investigating the special pathological features manifest in the dentists' more restricted sphere. Inexcusable errors are too frequently the lot of the every day machine and unscientific dentist. I need not qualify my assertion in this matter with the high sounding title of this paper, "Complications in Diagnosis," as the latter is more advanced, but call it the natural result of neglect to properly study these subtle causes which always have their subsequent effect, and which causes must be known and permanently impressed before the prognosis or outcome of any morbid condition can be even guessed at with a degree of certainty. Therapeutics, in such hands, is pure empiricism, and all the materials employed in medicine are gropingly gone through with to no avail, unless some features of the pathology are well understood.

We must have a clear understanding of what a thing is, before we can understand its peculiar operations. Hence the study first of organs, or anatomy. Then what organs do in health or viz., their physiology. Then what organs are made of, or their histology. Then the influences of disease on these elementary histological parts, or pathology.

I am obliged to be brief, but let me say that there is nothing from the general anatomy of the head, to the structure of Nasmyth's membrane, with everything intervening, anatomical and functional included, but what should be of interest to us as dentists. In fact it must be, or we cannot diagnose conditions deviating from the natural.

For instance, the gums, in their great variety of forms of health and disease, afford in themselves a large field for careful study. They present distinctly significant features peculiar to each disturbance. But we do not study them with a sufficient penetration. Cases have frequently occurred, where a mere suggestion of lividity at the margins of the gum, was diagnosed, lead poisoning, the patient medicated with sulphuric acid, or whatever other medicine occurred to the theoretical doctor, when in truth not a corroborative symptom of lead poisoning was present. Blunders innumerable might be recorded daily among practitioners of medicine and its collateral branches. And I might call your attention to only a few of the many conditions where we, as dentists, are liable to the same mistakes. The many forms of tumors which exist will illustrate. Tumors, in the broad sense of the term, which are so poorly understood among our brethren, we hear called schirrus, sarcoma, osteosarcoma, etc., etc. Now each of these is distinct; their pathology and structures are distinct, and they are world wide in relation to malignancy. Yet how many would venture, before an intelligent body of medical men, to diagnose either in *situ*, or on a glass slide, one of the unwelcome growths? We must curtail further discussion on the important subject of tumors, on this occasion, and refer to some of the disorders with which we are more familiar. Perhaps the first, and we can add, one of the most important ailments for the dentist's consideration in the development of a patient, is dentition. It is important because it sometimes involves the question of life and death. To diagnose the difficulties sometimes arising in dentition, requires the keenest perception. Many a little sufferer has been laid away after writhing in tortures, and having the vital powers drained by the reflex complications accompanying dentition. The many infantile diseases designated in the coroner's memoranda are often misnomers, the mistaken condition being but a symptom of the prime cause of dentition. The list of ailments to which I could refer is so great that I am obliged to consider but a few of the many that I have noted.

The many forms of odontalgia, neuralgia, tic doloreux, periostitis, exostosis, exposed and inflamed pulps, hypersensitiveness of any of the parts of the teeth, impacted teeth, otitis from reflex action,—none of these is, strictly speaking, in a medical sense, a disease. Even odontalgia or neuralgia is not. But for convenience' sake they are classed as such; and as they have symptoms somewhat characteristic of each, it is perhaps proper that they are classed as separate diseases, their treatment sometimes differing. They should be clearly and distinctly comprehended.

We have also varieties of inflammatory disorders of the oral cavity, generally recognized as stomatitis. We have, 1st, Common diffused inflammation, due to many causes which should be investigated in each particular case. 2nd, Thrush, where there is diffused inflammation, with curdy exudation, an affection confined principally to children. Its study presents many points of significance to the diagnostician. 3rd, Follicular inflammation, often accompanying dentition. 4th, Eruptive, or vesicular inflammation. 5th, Ulcerative inflammation is known by the following names: Ulcerative stomatitis, ulcero-membranous stomatitis, *cancrum oris*, and canker. 6th, Sore mouth, peculiar to nursing women, or to those far advanced in pregnancy. Its existence, though rare, has been recognized for more than fifty years, by medical men; and it is important that we, as dentists, readily identify it. 7th, Gangrenous inflammation,—*gangrena oris*, or necrosis infantilis, as its name expresses, is principally pally confined to young persons, and occurs between the periods of the first and second dentition. Its symptoms are more fully explained in the books. 8th, Mercurial inflammation of the mouth is one of the symptoms of mercurial poisoning. The complete history of such cases should be carefully noted, and the cases well studied. Its symptoms should be compared to others, if the practitioner has marked others; and a correct diagnosis is probable.

Other local disorders, such as glossitis, or common inflammation of the tongue, due to many, or almost any cause, which must be ascertained by the dentist. It may be from scalding drink, local medication, bruises, stings or inflammatory abrasion from sharp teeth, or artificial dentures, etc.

Pyorrhœa alveolaris you are all familiar with, and the numerous other disorders of the gums have often engaged your attention.

Inflammation of the fauces or angina, tonsillitis, or quinsy. The symptomatology of this, though plain, should be carefully understood by every dentist.

Pharyngitis and œsophagitis, ozæna, coryza, and nasal, with post-nasal, catarrh, are very common disorders, and it behooves us to understand them intelligently.

There are many distinctions in minor diagnosis, such as differential nomenclature of decay of the teeth. For instance, it is claimed that one form of decay is caused by nitric acid, hence its name. Another by hydrochloric, sulphuric, lactic, etc. Each having its characteristic features, and is readily recognized by them. Permit me here to present the gist of one of these conclusions as advanced by many of the foremost of our profession.

Their foundation stone is that no tooth ever disorganizes or decays without some outside agent. This fact is axiomatic and we need not discuss it. Then commencing with nitric acid they say, as we know, that it destroys both the inorganic parts of the tooth, and that white decay is always caused by nitric acid. This latter assertion I do not know to be true, because I have never found it out, hence my liability to err in diagnosing these conditions as nitric acid decay. It is farther claimed, and in theory it seems plausible that we can find in the mouth all that is necessary to make nitric acid, viz., hydrogen, nitrogen and oxygen. Hydrogen and oxygen are obtained, the former from the decomposition of aqueous fluids, and oxygen from the air and remnants of food compounds; and we still need nitrogen. This we will say comes from a foul breath, in the form of ammoniacal gas, is caught by the hydrogen and oxygen, they consolidate themselves into this great chemical triumvirate, nitric acid. If no foul breath exists, the theory need not be spoiled. Nitrogen can be had from albumen, of which it is largely a constituent. So the theory almost seems a fact. Now as the nitric acid is formed fresh and potent, and as the teeth are principally calcareous, they must, of necessity, be acted upon by the former and white decay is the result.

All of the other classes of decay are built on the same hypothesis. Understand your chemistry, combine your elements according to chemical law, and who dare dispute it? Every requirement is as nicely supplied in theory as the parts of Greene's flying machine. But who will climb to the roof and try it?

These processes of decay are now generally accepted as correct. They are plausibly written in chapters, under their proper headings,—printed in the text-book, committed to memory, or forgotten by the thousands of students attending dental colleges, and, perhaps, reflected on by a few. Now is it not possible that all of this science theory of decay is evolutionary hobbyism, and some day may be overthrown, in company with our beloved special diagnosis? Like the schools of fashion, like the fallacies that existed and perhaps still exist in the practice of medicine, as phlebotomy, which was practiced from time immemorial up to the middle of the present century, as the barbarous dosing with calomel, or the mistaken theories concerning phthisis, and trichinosis. So we may be cherishing phantom theories, only to be overthrown by the deeper researches of our successors, and so with our diagnosis and treatment.

My efforts in this paper, and especially in the latter lengthy digression, revert again to the encouragement of independent, careful study, and close observation of everything, even though of apparently little value that comes under our every day notice in practice. Every patient with whom we come in contact, serves us as material for our stock of professional intelligence. If nothing abnormal exists we have the types of health to learn from; and they are as essential in forming diagnosis as morbid forms, and without which we could have no knowledge of the latter.

Before closing my discourse on this important subject, I must admit to you one of the most humiliating errors in diagnosis which has time and again fallen to my lot. It is the wrong estimation that I have made of the depths of my patients' pockets, and the discovery that my fees could have been doubled, and sometimes trebled, and yet, considered within bounds of moderation. Such diagnostic errors are particularly aggravating, especially to the dentist. There are, perhaps, others here who have been worried likewise. Perhaps in some cases it would be well to obtain your diagnosis before you render treatment. At any rate, this is the custom as taught in the regular study of medicine.

TREATMENT OF PULPLESS TEETH.

BY A. G. ROSE, D.D.S., CINCINNATI.

[Read before the Mississippi Valley Association of Dental Surgeons.]

This paper is intended to introduce the topic for discussion. We find pulpless teeth in four different conditions. The first case is one where there has been little or no pain attending the death of the pulp, the surrounding parts in a normal condition, tooth being somewhat discolored. These cases are usually discovered by the dentist, much to the surprise of the patient, who has experienced no discomfort, and is astonished at the condition the tooth presents. It is needless for me to go into detail as to the methods of procedure here, each of us, no doubt, having some favorite plan valuable to us from long experience and habit in using our particular disinfectant. It is in the thorough use of the disinfectant or germicide, that good results can be obtained in treatment of this condition. Let me here call your attention to some of the new and old remedies used for the purpose: Sanitas oil, eugenol oil, peroxide of hydrogen, bichloride of mercury, carbolic acid and iodine equal parts, salicylic acid, iodoform, creosote, carbonate of soda, tannin. In this condition is it best practice to push through the apical foramen and draw blood, carrying not only the point of broach through, but also particles of débris with it, which, no doubt, will create a slight inflammation if nothing more, not to speak of wounding the pericementum and leave a weak point for cerimental trouble to originate in the future? It seems better practice to give these cases rest and gentle treatment, complete removal of all disintegrated pulp tissue, and disinfect to the utmost. Should pulp tissue not be removed soon after the devitalization, or before putrescence occurs sulphureted and phosphureted hydrogen gases arising from the decaying pulp, may escape through the foramen, particularly when the cavity of decay is closed, and irritation and inflammation of the tissues surrounding and adjacent to the end of the root may be induced. This irritation may be incited, not only by the gas, but by particles of the pulp, or any foreign matter which may be forced through the foramen during the cleansing of pulp chambers. Following these causes, and often arising during treatment, are we confronted with this second condition: "Pulpless Teeth, accompanied by Pericementitis." The opening up of the pulp cavity or the removal of dressings, if treatment for disinfection is in progress, will generally give relief in a few hours. Depletion of the gum, the careful and complete removal of all calcareous deposits about the necks of the teeth and necrosed portion of the alveolar border will sometimes be all that is necessary. The applications to the gum over the affected tooth of a mixture of equal parts aconite and iodine tincture, painting the face along the course of nerves and blood vessels with a mixture of chloroform and tinct. of aconite, using capsicum plaster, and continuing them for sometime after relief is obtained, will greatly assist in effecting a cure. In this and the two following conditions, constitutional treatment will be of great benefit, and is oftentimes necessary to produce any beneficial results. Often in cases of pericementitis, treatment directed to the system will be of greater avail than local applications. Anodynes, tonics, and cathartics, are used with a view to the effect desired. In all stages of treatment, we cannot do better than to insist upon the continued use of mouth washes, the list of which is headed to-day by Phenol Sodique and Listerine. When pericementitis continues, the result is usually the formation of a sac at the end of the root which is a product of plastic pericementitis as seen under the microscope. If the sac is composed of dense fibrous connective tissue, the inner surface of the sac is not smooth, but largely provided with irregular protrusions or papillary outgrowths of a myxomatous structure crowded with inflammatory elements. This is the third condition, Pulpless Teeth with an Abscess, without an external opening. In this stage where the pulp has been dead for some time and abscess in its incipiency, or, where it is gone to such an extent as to prevent rebuilding of the tissues surrounding the end of the root, it is sometimes necessary to carry a small drill just through the foramen, so as to make a fresh wound and secure healing by first intention. So long as putrescent tissue remains in the pulp chamber, and the mephitic gas arising from it escapes through the apical foramen, so long may the production of pus corpuscles continue. This transformation of the tissue that is destroyed into "pus" should be changed and the parts gotten into such condition as to favor a return to normal action, else the abscess may become chronic. There are two methods in vogue for the treatment of this stage. Injecting the disinfectant through the root and into the saccule by means of a finely pointed syringe, and carrying a piece of floss silk or cotton saturated with the remedy, into the canal and through the foramen with a broach. The chloride of zinc can be used to advantage in this latter way, and solutions of carbolic acid, bichloride of mercury, peroxide of hydrogen, nitrate of silver, in the former. When the application is made by means of placing pieces of silk or cotton in the root canal, and the medicinal effect of the remedy desired for a few days, it is best to seal the cavity of decay with a preparation of gutta-percha and wax, or some good temporary stopping instead of the old method of a pellet of cotton saturated with gum sandarac. You receive not only the blessings of your patient, but achieve better results in treatment. In the last condition of "Pulpless Teeth with an Abscess, and a Fistulous Opening," it is proper after removing all disintegrated pulp tissue, enlarging the pulp canal and fistulous opening, to force an escha rotic or disinfectant through the apical foramen into the sac and the fistulous opening if possible, this will bring about a healthy condition of the tissues involved at the point of the root; will prevent further disintegration, the continuance of "pus" production, and the rebuilding of the "gum" tissue at the external opening. In bad cases of chronic abscess, it will be necessary to enlarge the fistulous opening, and with a bur or abscess knife cut away all necrosed alveolus saccule and portions of tooth substance, if necrosed. This is treatment which rarely fails to effect a complete rebuilding of new tissue. Care must be taken that the opening upon the "gum" does not close before reformation of tissue has taken place. The use of Dr. Farrar's syringe in this condition is well known to you all. An invention by Dr. Watt, called the Exhaust Syringe, is particularly adapted to treat cases of this kind. By its means medicine in proper quantity can be drawn directly through the pulp cavity, sac and sinus, and is what is termed an artificial leech. This is a great improvement on the old method of injecting medicine through root, sac, and sinus, and the consequent excoriation of the soft tissues of the mouth, which is entirely prevented by the exhaust syringe. The exhaustive action of the artificial leech is designed to promote the collapse of the sac walls in contradistinction to the distending effects of the common force pump process, and may presumably hasten the obliteration of the sac.

TOOTH DRAWING UNDER DIFFICULTIES.

BY A. BERRY, D.D.S., CINCINNATI, O.

A MIDDLE aged healthy man called with a hard tumor, about half the size of a small hickory nut, over the region of the left superior central incisor, of which only a portion of the root remained, and was discovered only by probing. This was evidently the cause of the abnormal growth. Two tumors like this, and similarly located, had been removed by a physician.

With cutting forceps an incision was made and the entire diseased parts, including the tumor, the root of the tooth, and the alveolar process, were removed. There was considerable hemorrhage for a few minutes, which was arrested by the application of pledgets of cotton saturated with cold water. The wound healed readily, and there was no recurrence of the tumor.

When a physician intended to extract six diseased and aching teeth for a colored woman, he was defeated by her refusal to open her mouth. A dentist was sent for, who, after a little friendly advice, found the patient still obstinate. A rope was secured above her ankles, and her feet raised from the floor. Her arms were pinoned so she could not get her hands to her head; and her inferior maxillary was forcibly depressed, and a block was put between her teeth. During this preparation, the patient said, "I never did think I should come to this." One of her molars was then removed without trouble; and she promised, if untied, to "behave herself." She was released, and the other five teeth were extracted without resistance from her.

A gentleman called with his face and neck much swollen, and unable to open his mouth more than an eighth of an inch. His trouble was the result of a diseased inferior second molar, which had been broken off at the alveolar border four years previously, and the roots left in place. There had been no absorption of the alveolus, nor loosening or elevation of the roots. With some difficulty they were extracted with elevators.

The patient stated that a week before, when in condition similar to that at present, he requested the services of a dentist who is an expert extractor, but he declined to attempt removing these roots, and told him, in reference to the pain he suffered, that he "must stand it."

A lady about thirty years of age stated that she had suffered severely during several years from neuralgia, and when the pain was seated in her superior teeth, none of which became carious, she requested dentists to remove them, but they all refused to comply with her wishes. But after repeated periods of suffering she had parted with all of her upper teeth, except three, and would have them out soon. The sockets of two of these were found to be diseased, and as the patient was then in good condition for the operation, she was induced to submit to the removal of the three teeth without delay. They were readily extracted minus the small points of two roots of a molar, and one root of a cuspid, the root being crooked.

The operator said that if left in probably these small fragments would give no trouble; but, supposing there would be constant fear of it, he added, "But I prefer to take them out if you will endure the pain." With occasional intervals for rest the pieces were extracted with very small elevators, without complaint from the patient. Looking at the clock on leaving the chair, she remarked, "It has been an hour and a quarter."

A patient, pointing to a superior second molar, said, "My dentist says that tooth ought to be taken out." On examination, the correctness of the decision was acquiesced in, and the immediate removal of the tooth was assented to. With forceps well applied, under apparently favorable conditions, it was found impossible to luxate the tooth, as expected. The operator went to his laboratory, and returned with a hammer and a piece of steel, a quarter of an inch in diameter, and six inches in length, one end of which was applied to the neck of the tooth, which was soon loosened by taps of the hammer, when it was easily taken out with forceps.

The patient then said, "I knew my dentist was not strong enough to move that tooth, but I thought you could do it." The operator remarked, "This is what we surgeons call heroic practice." The reply was, "I think it heroic in the patient."

THE MICHIGAN STATE DENTAL ASSOCIATION.

ANN ARBOR, MARCH 16 TO 19, 1886.

The Association met in the lecture room of the Dental College, in the afternoon of March 16, Pres't F. W. Clawson in the chair. After some preliminary business and arranging for the entertainment of visiting dentists the association adjourned.

EVENING SESSION.

Met in the same room. The President called the meeting to order and introduced President Angell, of the University, who extended a hearty welcome to the Association. He gave a brief history of the Dental Department of the University, and awarded the credit of its organization to the Association. Whatever legislation is to be secured to advance the interests of the Dental Department, must come largely through the influence of the profession. It has been the policy of the faculty to constantly elevate the standard of admission and work; and the results have justified their efforts.

Prof. C. L. Ford then gave a very interesting lecture on Odontology. He said the teeth of the animal kingdom were divided into two general classes. Those uniform in size, shape, plan and purpose, known as hornodont dentition, and those of different kinds and uses known as heterodont dentition.

There are three orders of dentition, monophyodont, one dentition, where one set of teeth lasts through the natural life, practically unchanged; diphydont, where two sets of teeth are developed, the one following the other; and multiphydont, where dentition is repeated or reproduced.

The teeth of *Mammalia* have four classes of forms: The incisor, characteristic of rodents, where it is marked by continuous growth during life, not only the form, but the structure being reproduced by what is known as a persistent pulp, which produces continuous growth; the cuspidate or canine teeth, characteristic of carnivorous animals; the bicuspidate, not belonging to any special class; and molars, characteristic of ruminating animals. He described the construction of the teeth, and the wonderful adaptation of the elements that enter into the structure, and form, and arrangement, adapted to the work to be done.

The mechanism of mastication consists in three distinct movements of the lower jaw,—the vertical movement, seen in the *carnivora*, the lateral, as in *herbivora*, and the antero-posterior, as seen in the *rodents*. In man all the movements are combined. He defined typical dentition as a number of teeth present in some animals, and accepted by odontologists as a standard of comparison. The number is 44, consisting of three incisors, one canine, four premolars, and three molars on each side of the jaw. The classification of the teeth was determined by their location, rather than by their shape. The incisors all appear in the pre-maxillary bones. The pre-molars are first in order in the maxillary bone. The molars are the only teeth that have no predecessors. He thought this a subject of special interest to dentists, and suggested that it be given careful study. The lecture throughout was illustrated by specimens from the museum, and was listened to with marked interest and attention.

A resolution was adopted tendering the thanks of the Association for this interesting lecture.

Dr. J. E. Low. of Chicago, read a paper on Bridge work, and described his methods of performing this operation, as his article in the Journal sets forth.

Dr. Pelton asked whether the undue pressure thrown on the teeth and roots supporting the plates, or "bridge," would not produce inflammation and irritation of the surrounding parts.

Dr. Land described a case where three loose teeth were made to support a complete denture, and, to his surprise, he found them growing firmer.

Dr. Taft said that so long as the pressure is direct and vertical, no irritation would follow, but would tend to make more firm the supporting teeth. He thought lateral pressure might produce some irritation. The same objection was urged against malleting, on the introduction of cohesive gold. The best conditions of the teeth are conduced by pressure. He had placed a Richmond crown on a loose root seven years ago. It is firmer today than it was then, and is doing good service.

Dr. Low said that because there was occasional failures a method should not be condemned on that account. There are failures in fillings which do not prove that fillings are not a good thing.

By resolution, all present were invited to take part in the discussions.

During the day, on March 17, the time was occupied by clinics, in which operations in the mouth formed the chief part, under the direction of Prof. Watling. Dr. Low demonstrated bridgework, by inserting two superior central incisors, attaching to the laterals.

Prof. Dorrance had a case of cleft palate in hand, and Dr. Land demonstrated a new process of crowning roots, and facing broken, or defectively developed teeth. He set two crowns on two very small lateral incisors. They were sound, but were imperfect, not over one half their natural size. His method is to shape the tooth or what is left of it, then fit a band of platinum around it, select a crown of proper shade, and grind it away on the back, until it is thin enough to restore the front portion of the defective tooth, when placed against the platinum band. When the proper adjustment is secured, he removes the band and porcelain face together, adds fresh tooth body to produce proper shape and then bakes in his furnace until the porcelain and metal unite by fusion of the former. This crown is then adjusted to the natural tooth, with oxyphosphates mixed thin. It forms a neat and artistic, and should be a durable, operation. It possesses many good features, one of which is that badly decayed, or broken teeth, with living pulps, can be restored to natural use and beauty without removing what is left of the natural crown, or devitalizing the pulp.

EVENING SESSION.

The Association met in Room A of the main building and listened to a paper by Prof. Martin of the Medical Department. (See Dr. Martin's paper in this number of the JOURNAL.)

DISCUSSION—NECROSIS OF THE JAW.

In answer to questions, Dr. Martin stated that the wisdom teeth were erupted. The decayed tooth on the left side, in which the pain was first felt, was extracted three days after the first indications of trouble, but not until extensive swelling and severe pain were experienced.

DR. LOW thought it a simple case of abscess from the beginning.

DR. HARROUN said such complications might result from contusion, caused by undue vertical force exerted on the crown of the tooth.

DR. TAFT said that inflammation of the periosteum, from whatever cause, is apt to extend rapidly to other tissues. Some are far more susceptible to such rapid extension than others. Study the characteristics of the patient, and adapt your treatment to the case. In the case reported, the patient seemed especially susceptible, either from constitutional tendencies or surrounding causes and circumstances, to the rapid and serious extension of the necrosis. It was a remarkable case. The necrosis began on the left side, and after apparently yielding to local treatment, extended very rapidly to the right side. The causes were probably local irritation supplemented by systemic conditions, malarial influences, exposure, defective nutrition, exhaustion, etc. It is an important and interesting case.

Dr. Shattucks, of Detroit, related a case of a negro fireman on a lake steamer for whom he extracted a tooth, which was followed by extensive necrosis and partial loss of the jaw and of several teeth. He was threatened with suit for mal-practice, but thought the condition under which the man worked, of alternate exposure to extremes of heat and cold, produced disturbances of the system that resulted in the extension of the periostitis already begun before extraction of the offending tooth. He was glad that cases were on record which prove that the cause is inherent in the case itself, and not the fault of extraction.

Dr. W. S. Jackson did not think necrosis any more liable to follow extraction than to precede it. He cited a case where the teeth had been extracted for years, and artificial teeth worn where necrosis occurred. No indications of old roots remaining, in fact no apparent cause.

Dr. Young said he had a case in his experience where inflammation and swelling followed treatment and filling of a tooth and necrosis; extraction of all the lower teeth was followed by rapid recovery.

Dr. Crawford reported the case of a strong and healthy German driver on a fire engine, indolent and uncleanly. Severe pain in lower left central. Extraction was followed by extensive swelling of the entire left side and necrosis of bone; a good recovery. Notwithstanding the personal habits of the patient, were unfavorable.

By unanimous vote, the Association thanked Dr. Martin for his interesting paper.

The day was occupied with clinics on the 18th.

EVENING SESSION.

TRANSPLANTING TEETH.

Dr. Metcalf read the pamphlet by Dr. Younger, of San Francisco, in which he described his experience in transplantation of teeth, and especially into artificial sockets, drilled into the alveolar ridge. He had successfully placed in the mouth of one lady patient, no less than seven teeth, all of them set in sockets drilled into the solid bone of the superior maxillary.* They cannot be distinguished from the lady's own teeth, by the closest scrutiny.

Dr. Allport thought it was difficult to discuss the paper, because it described an operation that is so unusual as to be practically unknown. We must accept as facts the statement made. The question naturally arises, what takes place after such transplanting? The process must be similar to the union of a fractured bone, when nature throws out new bone material to fill the intervening space, and unite the osseous structure. Nature simply adapts herself to the conditions made, or forced on her. He could not see how sufficient support could be secured where the natural teeth had been removed for so many years, the absorption of the alveolar ridge removing the natural support.

Dr. Harroun said he had met Dr. Younger. He is a man who has the skill and courage to venture into new fields.

Dr. Field, of Detroit, related a case in practice, some years ago, in which he tried to regulate the superior right central incisor of a young lady. It acted very much as if broken off, but was attached to the gums. In course of time a bicuspid appeared back of and across the root of the central. This was removed in St. Louis during a visit there. The central did not become any firmer. On her return to St. Louis Dr. Morrison removed the crown of the central and found the root had been absorbed by the encroaching bicuspid. Dr. Morrison then removed a crowded lower bicuspid, treated it, and shaped it by contouring, reamed out and enlarged the socket of the incisor, adjusted the prepared tooth in its place, bound it to adjoining teeth for support, for three or four weeks. It formed a healthy union, and is now doing good service in its new home. Except a very slight variation in shape, scarcely distinguished even by close inspection, it is doing as good service both for beauty and use as any tooth in her mouth.

Dr. Taft, who had examined the case reported by Dr. Field, said it had prepared his mind for Dr. Younger's operation. It is not inconsistent with nature's processes, that a tooth so inserted, with proper preparation and care, should grow fast. The question might be asked whether a tooth could unite if all its periosteum were removed. Probably not, as the periosteum seems to be the source of vital union. In the development of the natural teeth, the crown rests in its place in the bone, much larger than that filled by the fully developed root, so that nature must throw around the roots after the eruption of the crown, the bony socket, which forms their support. Probably the periosteum lining the socket is not developed until after the tooth is developed. The one *necessary* condition in transplanting teeth, is to preserve the vitality of the periosteum on the tooth that is transplanted. If the tooth is entirely devitalized by too long exposure, or to great heat or cold, it will not unite.

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* The reporter has written us that this should state four teeth in one mouth, and one in each of three others—seven in all.—Ed.

ADHESIVE DENTURES.

Dr. C. H. Land, of Detroit, read a paper on "Adhesive Dentures." He argued that the generally accepted teaching that artificial plates were held in place by atmospheric pressure, is erroneous. He argued that to produce an atmospheric pressure there must be partial vacuum and that in a perfectly adapted denture, such a thing as a vacuum does not and cannot exist. In fact adaptation of two surfaces precludes the possibility of a vacuum either partial or complete. But the force that retains a plate in position is adhesive, which always exists between two adapted surfaces, and which is increased by any intervening liquid. Greater between flexible or yielding surfaces than between rigid, but never more than two pounds to the square inch. The fact that moisture is necessary to adhesion of an upper plate, proves that no vacuum or tendency to produce one, is in the force exerted. No suction can be secured in a dry plate in a dry mouth. Moisture is not necessary to atmospheric pressure, but it is to adhesion.

Dr. Dorrance thought it absurd that any one should doubt that atmospheric pressure was the force exerted. Dr. Land's paper had a grain of truth in a mass of rubbish. He claimed that plates *are* held in by atmospheric pressure.

Dr. Field said it was absurd for Dr. Land to occupy the valuable time of the Association arguing so hackneyed a subject. He disagreed wholly with the conclusions of the writer.

Dr. Land defended his position, giving reasons and illustrations.

The Visiting Committee to the dental college presented their report. The college is running along smoothly and everything is working in harmony. The committee recommended that the Regents be asked to place the professors occupying the mechanical and operative chairs on the same level as to salary. A committee was appointed to confer with the Regents and express the the sense of the Association that the two professors should receive the same salary.

Dr. Metcalf argued that the two should not be placed on the same level, that the mechanical required an inferior grade of ability.

The following officers were elected for the ensuing year:—President, L. L. Davis, Eaton Rapids; 1st Vice Pres't, H. Cowie, Detroit; 2nd Vice Pres't, H. C. Corus, Detroit; Treas., H. K. Lathrop, Detroit; Sec'y, J. B. McGregor, Port Huron; on Board of Censors, J. H. Harris, Pontiac; University Visiting and Consulting Committee, C. B. Porter; on Publication, Dr. Younge, Dr. Field and Dr. McGregor; Executive Committee, Drs. Watling, Clawson and Harroun.

The Association voted to hold its next annual meeting in Ann Arbor. The facilities for clinics in both operative and mechanical dentistry are so excellent at the college, that it is difficult to conceive of a more proper place. In fact if the best results are to be accomplished in association meetings, the only proper place to hold such meetings is at some dental college.

The attendance was good and the interest lively throughout. About 180 were present, including the dental students.

The operating of Drs. Field, Moore, Harroun, Low, Land and others was always witnessed by as many as could get within seeing distance. There were some very fine operations, as there was abundance of material and good operators.

Prof. Ford's lecture revealed the breadth of the field specifically belonging to dentistry. A study of many of the points presented would be of great practical value to dentists. The mechanism of mastication is one point worthy of study in adapting artificial teeth.

Dr. Husted of Oberlin, O., had a pneumatic plugger on trial.

Dr. C. H. Harroun, of Toledo, in behalf of the Ohio State Dental Society, invited the dentists of Michigan to attend the next meeting of that Association to be held at Toledo, in October.

Were it possible for Dr. Younger's operation of transplanting teeth into artificial sockets to become general practice, the query arises, where would the supply come from? Teeth would have to be raised from "seed."

A good delegation of Buckeye dentists was present to get enthusiasm and new ideas—as well as to give.

Compilations.

"Gather up the Fragments."

THE SHORT-CUT TO DENTISTRY IN ENGLAND.

[The following "treatise" on operative dentistry by a chemist (druggist) we find copied into the *British Journal of Dental Science*. It makes a very interesting addition to the flow of reminiscences now being published in our journals.]

How did I become a surgeon-dentist? Well, there's the rub! I might almost say I was born one for my earliest days were spent in watching my "Pater" turn out the ivories with a cork-screw, for such was my childish idea of the "key." Forceps were rarely used, and when they were it was often my luck to pick up the crowns, minus the fangs. School-days came, then apprenticeship in the North of England to a country chemist, who was too weak-nerved and tender-hearted to indulge in tooth-extracting; when I became an assistant in a quiet north-country village, I found a few old forceps kept for the purpose of pulling nails out of packages. With these it was pastime for me to practice extracting nails, however tightly fixed, without breaking off the heads, and at which I became an adept. About this time I suggested that my employer should purchase a few new forceps and a key, hang up a card "Teeth extracted here," and allow me to do the extracting. At last, after considerable hesitation—for he was very diffident and extremely cautious—he agreed to find the instruments on condition that he should have all the cash they brought; and for bad work all the blame must fall on me; so, with his permission, I asked the advice of an old friend, a "proper dentist," what instruments were most suitable. He advised as follows:

One instrument only for upper incisors, canines, and bicuspids. Two instruments (1 each for right and left) for upper molars and wisdoms. One instrument for lower incisors and canines. One instrument for lower bicuspids. One instrument for lower molars. Two instruments, 1 each for upper and lower roots and stumps.

He did not wish me to have a "key," but my remembrance of the "key's" work was decidedly more satisfactory, and clearer than of the forceps; so he said, as I was "key-mad," I had better get a child's key with reversible claws. I may here state never was judgment better shown, for with the foregoing stock-in-trade hundreds of teeth were successfully extracted, much to my employer's satisfaction of mind and pocket. We were in the midst of an agricultural district, to which the nearest town was distant some four miles, and our patients varied from the dainty lady to the strapping plough-boy. I must confess in my first ventures I was rather nervous, but as time went on no tooth, however bad, was too bad for my unskilful hands to dare; and now, across the brink of over a quarter of a century, recollection of those days of practice comes fraught with keener delight than do the extractions of to-day, when with a grand dental chair and improved apparatus, two or three of each kind of instrument, and all the latest varieties in pattern and shape, I remove the useless "grinders" from aching jaws.

As some practical remarks from my own experience may be of use to those engaged in pharmacy, where in country towns a surgeon-dentist may only go once a week, or in villages where he goes not at all, and where the poor, in pain, seek first the chemist's aid, I pen these lines. I find also even in towns, many chemists do not extract teeth, and yet if they will they can. The time occupied is easily spared, and the cash for the operations is all profit, after paying for the instruments. In the first place, to those essaying tooth-extracting fear must be entirely put aside, and a determination to do the best for the patient one can; and with the instruments mentioned before, and the addition of a tooth lance and probe, a very great deal can be accomplished, and that satisfactorily to the operated upon and the operator. An old dentist of whom mention has already been made gave me this advice: "When you go to take out a top tooth put the instrument carefully on and push upwards as if you expected it to come out beyond the hair; it never will, but you will often find that the tooth has jumped out into the instrument. With the lower teeth pressed downwards as if expecting the instrument to show itself below the chin and jaw. You will not see the instrument, but before you have got it half way down the tooth is out." Which, to my surprise, I found partially true.

It is well to get a correct knowledge of the permanent teeth, thirty-two in number (sixteen in each jaw), and their exact positions; anatomists divide them into four classes: incisors, canine, bicuspids, and molars. They are arranged in the following manner: (1) Four incisors, the two central and most prominent teeth in front of the mouth, and two lateral incisors (one on each side of the central), which are smaller and not so wide. (2) The canines, or eye-teeth, being pointed and longer than the other teeth, one on each side. (3) The bicuspids, or small double teeth, two on each side. (4) The molars, or grinding teeth, three on each side, which are much larger and stronger than the others, the last of which is called the "wisdom" tooth, and is generally the first to decay, though the last to appear.

In the extraction of teeth it should be always borne in mind that the outside of the jaw, or alveolus, in which the fangs are situated, gives way more freely than the inside, consequently pressure of the instrument used should be inclined to the outside; also, take care to have a supply of warm water (never cold), with which the patient can wash out the mouth. It specially pleases them, and soothes the tender gums, as well as producing free bleeding, which promotes the discharge of matter when an abscess has formed.

One of the secrets of success in extracting teeth is to let the force of the instrument be laid on the root and not on the crown. For extracting lower incisors affix the forceps on the tooth (not over the gums), push it well down, press outwards, with a slight turn of the hand from side to side, lifting upwards, and the tooth is out. The extractor stands in front of the patient. With lower canines use same measures as with lower incisors, using more force; extractor stands facing tooth. With lower bicuspids well press the forceps down, when tooth will frequently leave its socket by pressure alone. If the expected does not happen, move firm but gently outwards, then inwards (to loosen the fangs), repeat until tooth is seen to be moving from its socket, then lift upwards. Operator stands in front of patients for right-side teeth. For left-side teeth it is more convenient for successful results for operator to stand sideways to the right of patient. For molar and wisdom teeth in the lower jaw, let the operator carry out directions as for lower bicuspids, and place himself in similar position. After fixing the instrument on offending tooth, a little pressure on the nose of the forceps with the thumb or finger of the left hand, so as to wedge the instrument down between gum and tooth, will not only enable it to be grasped firmer, but gives more certainty of its speedy extraction. For upper incisors use gentle force outwards and inwards, gradually moving the wrist as if to bring one side of the tooth to the front, and pull downwards. For upper canines do likewise. For upper bicuspids press the instrument well on the root of the tooth, move outwards and inwards, and as tooth is seen to give, use gentle extractive force downwards. For upper molars and wisdom teeth, affix the forceps on the tooth to be extracted (do not mistake "right molar" instrument for left-side tooth, or *vice versa*), push well up to get a solid hold (three or four fangs are here), move outwards then inwards, then outwards again, well bearing outside, when tooth will be seen to follow the instrument, and may at once be brought out. For all upper teeth operator should place himself to the right side of patient.

For lower stumps it will be necessary to press instrument gently down, then lift upwards. For upper stumps press forceps on and upwards gently, and carefully twist it round.

In reference to nitrous oxide and anæsthetics (chloroform and ether for inhalation), none are now used by me. Some few years ago an operation under chloroform came so nearly having a fatal termination that I have abolished them entirely. Ether spray for freezing the gum, when applied to a decayed tooth requiring extraction, when free from pain, will, to a certain extent, numb the pain of the operation; when applied to an aching tooth the pain caused by the application of intense cold is actually worse than the pain of extraction without it.

The "key" I seldom use now (though my favorite instrument in bygone days), except in those cases of upper or lower molars where one side has all decayed away; then, if there is only a little on which to secure the claw, the principle of leverage involved will accomplish its purpose. Should any who read this intend purchasing a "key," let one be chosen with reversible claws and an ivory handle (ebony handles occasionally break when key is being used, much to the annoyance of the operator, and the terror of the patient.)

Plugging decayed teeth is of much importance, as it is frequently the only means of preserving them when beginning to decay (if no toothache has been felt), although removing it with a file or cutting instrument is considered far preferable in some cases.

Tartar is a discolored coating which will form on teeth.

It is composed of earthy matter, and at first is of the consistence of jelly, and may be readily removed, but in time it becomes hard, and requires the skilled hand of the mechanical dentist to remove it without injury to the teeth.

The mechanical part of dentistry will be better learned by three months' tuition from a skilful mechanical dentist than from all the papers that could be written, and mechanical dentistry requires more time than a pharmacist in business can spare. Those chemists who have established themselves as mechanical dentists have invariably found that one profession must be abandoned, and it has been in all cases of which I am cognizant, and they are not a few, that the shop has been sold, and rooms selected for carrying on "dentistry" alone, thereby proving that it pays better, or is more attractive, than pharmacy, though it may increase the chemist's trade in preparations, etc., for the teeth.—*The Chemist and Druggist.*

ON MEDICAL TREATMENT.

(Dr. Samuel Wilks, consulting physician to Guy's Hospital, in *British Medical Journal.*) I should be loth to discourage true therapeutics, since the scientific method of treating disease is one great disideratum ; but, at the same time, the discovery of a substance which shall act in some powerful manner upon the organism is only a small part that is required. Judging from the immense number of medicines in use, and these daily increasing, one would think that the sole object of the physician was to discover new remedies. In looking over a list lately sent me by a druggist, I counted no less than fifty drugs whose names I had never before heard of, and the multiplication is still going on. It is not medicines which we want, but a better knowledge of how to use those we already possess.

I constantly hear the opinion expressed, that our knowledge of therapeutics lags far behind our knowledge of physiology, pathology, or clinical medicine. I have no sympathy whatever with this notion, for I believe they all go hand in hand; and I venture my own individual opinion—and with this perhaps some of you will not agree—I do not wish for any more drugs, for of what good would they be to us? What is the use of putting edged tools into the hands of children who do not know to employ them? What is the value of a drug, if we be not uncertain of its action, but have no knowledge of the indications for its use.

I confess, for my own part, that I never pass a week without having inwardly to exclaim: "Thank heaven! we have no more drugs, and those are not so powerful as their administrators would wish." I will explain: I see a lad with pleuritic effusion which has pushed down his liver; the medical man had overlooked the presence of water in the chest, but had discovered the liver below the ribs. He considered this to be enlarged, and gave the boy mercury to reduce it. Now, is it not fortunate that mercury had not the wished for power in reducing a healthy liver to half its size? Again, I see people with osteitis deformans and other cases where the bones are enlarged, and iodide of potassium is almost universally given, but it never does any good. Again I exclaim: "How fortunate is this!" Could iodide of potassium absorb bone, what a responsibility would rest on the medical men who prescribe it, and in what a condition would the skeletons of civilized people be.

Another example, the hypertrophied spleen. Nearly all patients with this affection are given quinine and iodide and bromide of potassium in order to reduce it. How thankful I am that these attempts are ineffectual; for if these drugs could absorb healthy spleen structure, what a mass of people would now be spleenless! I have more than once heard a man deplore the want of a powerful styptic in a case of hemorrhage from the lung in heart disease, and in hemorrhage from the stomach in cirrhotic enlargement of the liver, when Nature was doing her best to relieve the congested organs. If good liver-tissue, bone-tissue, and spleen-tissue, could be removed in the manner hoped for by the medicines given for the purpose, and if gorged lungs and livers could be stopped from emptying themselves by styptics, is it not a mercy that we have no more powerful drugs? The only compensation I can see for those direful influences would be the compensating power of reproduction by other medicines, in the way of flesh-formers, fat-formers, blood-producers, and the like. For example, a little idiot child is taken to a medical man, who prescribes for it cod-liver oil and phosphate of iron as being the only likely remedies to improve the brain, seeing that phosphorous and fatty matters enter into its composition. Now, if the prescriber had his wish, he would have liked to create some more cerebral tissue, or to see the brain grow. Supposing he could have done so, consider the gigantic brains and corresponding intellects which it would be in the power of the profession to produce.

The result of all this experience teaches me that we have enough drugs for our present state of medical knowledge. In spite of the enthusiasm of some as to the value of drugs, I think there must be a large amount of skepticism afloat in the minds of the profession; for if, for example, in a case which is believed to be tubercular meningitis, medicine should be given in a most serious mood, and a child recover, the medical man thinks he must have been mistaken in his diagnosis, and the disease could never have existed. He never fails to give medicine, but never expects it to do any good; he has some kind of hope that it may be useful in some other way. Now this is a very curious attitude of the medical mind; to prescribe for a complaint in the hope that it does not exist, or that it is something else.—*Cols. Med. Jour.*

THE HABIT OF USING TECHNICAL OR SEMI-TECHNICAL TERMS.

Another difficulty is the almost universal habit which students have of using technical or semi-technical terms which, in reality, convey to them no idea whatever. They think they have comprehended the *thing* when they christen it with a high-sounding *name*, and they do not stop to ask themselves whether they understand what the name means. The student who called a hole in a cell-wall a bioplast was quite pleased with his achievement until he was asked what a bioplast was. The suggestion that a hole might, without any great violence to the English language, be called a hole, was timely if not pleasing. Evidently, for an educated man, the art of calling a spade a spade is difficult to acquire. Day after day, one is required to ask students to translate their lingo—I don't know what else to call it—into English. Frequently they can not. At length they begin to see that they are only deceiving themselves by using words they do not comprehend to describe structures they do not understand. It frequently happens that, after a student has described an object under the microscope in what he considers fine scientific language, he admits that he does not understand the structure of the object at all, but, on making him start over again, and describe it in plain English, he finds that it all comes out clearly enough. It is evident, for instance, that, so long as a student thinks he must call all round bodies in cells nuclei, he will soon have such a stock of nuclei on hand that he will be hopelessly confused, and the matter is not much improved if, as a last resort, he indescriminately calls some of his superfluous nuclei vacuoles and others bioplasts. The tendency to use meaningless words is not, by any means, confined to biological students, but, in a laboratory where one is examining something definite, the evil should certainly be checked by frequent demands for English translations of verbose rubbish.—*Prof. W. G. Farlow, in Popular Science Monthly.*

LOCATION AND TREATMENT OF RANULA.

Dr. E. Sonnenburg, in the *Archives für Klinische Chirurgie*, xxiv., 3, p. 627, treats the above subject. He relates the following case:

A six-year-old girl showed, in a widely opened mouth, a tumor, which fluctuated and was of a bluish color. It was situated in the floor of the mouth, and was elastic to the touch. This pressed the tongue upwards, and made speech and the taking of nourishment quite impossible. Wharton's duct was, on both sides of the tumor, free, visible, and readily sounded. The submental region was distended clear to the upper part of the thyroid cartilage. The extirpation was made through a six cm. long transverse incision in the region of the lower jaw. Still it was possible to free only the lower part of the cyst from the surrounding parts. On account of the great distension upwards, it was found necessary to evacuate the muco-purulent contents, and then through pulling forwards of the cyst walls, which causes the tongue also to follow, but finally freed the cyst from the soft parts. By means of examination by the finger it was found that the cyst was contained entirely in the substance of the tongue, and that only a thin shell of the muscles of the tongue was present. The bone substance of the lower maxilla was atrophic, and it projected past the superior maxillary three-fifths of an inch. On account of the falling back of the tongue, it was found necessary to draw this membrane forward with a thread. The wound, which was drained, healed in about fourteen days. The tongue appeared small, but in a normal condition, while the swallowing was good; but the speech was not yet distinct. The walls of the cyst showed a layer of epithelium. The contents consisted of mucus and pus cells.

The author has examined about fifty cases of ranula, and comes to the conclusion that they are in direct connection with the Blandin-Nuhn glands. There are two glands situated at the apex of the tongue beneath the mucous membrane and the longitudinal muscular fibres formed by the styloglossus and longitudinalis inferior muscles.

In the operation, the author recommends the following proceeding: One inserts a curved needle into the cyst-wall above and parallel with the duct of Wharton, fixes the cyst-walls by means of threads, which, if possible, also fix the tongue substance; then make a cut parallel with the duct of Wharton, and dissect the anterior wall, which one can draw out by means of the thread. Cauterization or drainage are then unnecessary. Quite large cysts are best extirpated *in toto* from the regio-submentalis, which is not difficult.

In the author's fifty cases he observed no relapse.—*Phila. Med. & Surg. Rep.*.

A Remedy for Painful Dentition.—The *Union Mèdicale* for January 9th, gives the formula of a syrup containing the following ingredients, which it attributes to M. Bouchat:

Hydrochlorate of cocaine, Borate of sodium,	1 part;
Syrup of marshmallow,	20 parts;
Syrup of white poppy,	10 parts;

The gums are to be gently rubbed with the syrup four times a day.—*N. Y. Med. Jour.*

THE WEAR AND TEAR OF MODERN LIFE.

A discussion on the above subject, recently initiated by Dr. Roose in the *Fortnightly Review*, has been largely taken up by the press, and treated in a manner befitting its importance. There has long prevailed a conviction, the outcome in part of intuition, in part of evidence, which, in its nature, is somewhat indefinite, that we are living at too fast a rate, and that the pressure shows signs of increase, rather than of diminution.

There seems to be no reason to dispute the prevalent impression that nervous diseases are more prevalent than formerly, and that we suffer vastly more than our forefathers from the sense of pressure, worry, and unrest. Mr. Goschen, in his recent admirable address on Hearing, Reading and Thinking, remarked with too certain truth that not only are we always in a hurry, but that we should be ashamed to admit that it was ever otherwise. This high tension, though no doubt peculiarly characteristic of metropolitan life, prevails more or less in all our large centres of population, and we cannot regard its possible further increase without apprehension, both for ourselves and those who will come after us. To a certain extent, it is the inevitable outcome of modern civilization. Steam has not merely quickened physical movement, but its accelerating effect has operated in every department of life and manners. The telegraph and telephone mark the victory of the nineteenth century over space and time, but we pay for the boon in an increased expenditure of vital energy. Education has enlarged its scope and its claims at so rapid a rate, that already the timid are beginning to demand a halt.

Now, we are far from thinking that civilization will arrest its onward career or abate its claims, no matter how loud or how earnest be the notes of alarm. We cannot put the drag on human progress, or modify at will the complicated conditions of modern society. Ease of existence and simplicity of manners are not to be obtained by merely sighing for them. But while we can do little to stay the onward relentless rush of modern progress, it is worth our while to inquire what are its peculiar dangers, and whither it is surely tending. We cannot leap from the express train, but it is something to know whither we are going, and whether the road is clear.

Medical science offers us this preliminary consolation. Hard work, physical or mental, is not only not hurtful, but is actually healthful. The hard working muscle, whether of arm or heart, responds to the stimulus, and receives an accession of vigor and development. The hard-worked brain, if placed under favorable conditions for its activity, becomes more vigorous and fruitful. Indolent inactivity of body or mind is undoubtedly far more injurious to both physical and intellectual vigor than severe labor, provided only that the labor be pursued under healthful conditions of food, air, rest, and sleep. This, in brief, is the message of science, that not labor, but its too often abnormal environment, is responsible for the deterioration of the physical and intellectual powers. The factory operative who succumbs at forty, dies not of hard work, but foul air and defective diet. Overpressure in the schools means, for the most part, not that the brain is getting too much food, but that the stomach is getting too little. The student induces brain-weariness, not merely by excessive study, but by late hours, insufficient sleep, lack of fresh air, and perhaps, an undue partiality for the tobacco-leaf or the tea-pot. It cannot be too strongly proclaimed, that the end of modern civilization is, not that we should arrest the pressure of work, which it is unnecessary to do, and, if necessary, would be impossible, but that we should learn to work under healthful and rational conditions.

One of the most genuine difficulties of modern life lies in the hindrances which exist in the proper adjustment of work. The hard worker is the man who maintains a high average of work, not he who crowds into one day the toil of two, and then spends two or three days of idleness in attempting to recuperate his powers. No error is more frequent or disastrous than this. Much vexation, disappointment, and disease would be averted, if we would ascertain the limits of our powers, and realize that to exceed them is not an economy of time, but precisely the reverse. This is a hard lesson to learn, and it is sometimes learnt too late. *Si jeunessi savait et si viellesse pouvait*—if youth only knew how rightly to use its powers, and if age only retained the powers which it learns, perhaps too late, how to use! This attempt to crowd into one day the work of two has the grave disadvantage of entailing a great expenditure of vital force as the result of worry. We wear ourselves out, not by hard work, but by anxious thought regarding the adjustment of work, and by nervous irritation at the failure to accomplish an impossible tax. A complex social system makes a multiplicity of claims upon us; but, if we would live wisely, we must learn so to adjust those claims, that we shall discharge each in the order of its importance, and not waste time and energy in constant hesitation as to which has the right of priority.

Science gives us a further consolation in its dictum, that rest is not to be found in inertness, but in change of occupation. The over-worked man often looks forward to his annual holiday, and promises himself the great luxury of simply doing nothing. He tries the experiment, and, in nine cases out of ten, it is a disastrous failure. He dreams of lying on his back, and watching the clouds or the sea, and enjoying a delicious indolence. He gets his wish, and he is more weary and miserable than ever before. He has forgotten that he is no longer a child, and that he has lost forever the capacity of being idle. But a distinct change of occupation would have given him the distraction which he needs. Thus, we see a great statesman spending his leisure of a Parliamentary recess in maintaining a philosophic controversy, or a great naturalist turning aside to discourse upon the choice of books. Amid the high tension of the nineteenth century, it is some consolation to know that the weary brain-worker need not seek absolute idleness; but, by turning aside into fresh pastures, may find new material for the healthful exercise of that mental activity which has become second nature.

The conclusion at which we arrive is, then, that the need of our age is not rest and stagnation, but healthful conditions for work, freedom from worry, suitable variety, and a wise distribution of our time.

In the April number of the *Fortnightly Review*, Dr. Roose resumes the thread of his former discourse, and indicates some of the remedies for the "wear and tear" which formed the subject of this first article. He enlarges with perspicacity and good sense upon food, rest, sleep, recreation, and kindred topics. On some points—for example, the value of horseback exercise to the brain-worker, the importance of rest not only after but before eating, and the necessity of seeing that the annual holiday affords mental distraction as well as physical repose—we can strongly endorse the opinion of the writer. Dr. Roose's articles are apt and timely, and they are sober and practical; they express opinions generally entertained by thoughtful medical men, and are well worth the attention of the wider circle of busy brain-workers, who require from us, not a prohibition of work, but help and guidance towards its better and easier accomplishment.—*The British Medical Journal.*

INFLUENCES OF ANÆSTHESIA BY THE INHALATIONS OF NITROUS OXIDE UPON VARIOUS FUNCTIONS OF THE ECONOMY.

The researches of Drs. Jolyet and Blanche in 1873 demonstrated that anæsthesia, produced by the inhalations of pure nitrous oxide, is always accompanied by a state of asphyxia sufficient in itself to produce anæsthesia. Dr. Lafont (*La France Médicale*) thinks that this asphyxia concomitant on the anæsthesia produced by nitrous oxide may be a source of serious danger. In support of this fact, he refers, first, to the production of death of the fœtus and abortion at four and one-half months of pregnancy; second, the appearance of chlorosis in a young, growing girl; third, the appearance of epileptic symptoms in a young woman who had been exempt from them for many years; fourth, the appearance of albuminuria in a case of mitral insufficiency; and, fifth, diabetes mellitus, observed twice in the same patient, following each time the administration of nitrous oxide. This latter point Dr. Lafont has studied upon himself. He found, in the first place, that his urine was normal, that is, it was free from sugar, and he found that, two hours after two successive inhalations of nitrous oxide, after a few minutes' interval, his urine contained 1.65 parts of sugar per thousand. Six hours afterwards there were 18.40 parts per thousand, whilst three days afterwards the quantity had been reduced to 3.95 parts, and on the fourth all trace of sugar had disappeared. Dr. Lafont also found that in the dog glycosuria was produced after the inhalation of nitrous oxide. This condition of glycosuria was found to depend upon an actual increase of sugar in the blood, the amount found increasing from one and one-half parts per thousand, which is said to be normal, up to three parts per thousand.

In following up still further the action of nitrous oxide, Dr.

Lafont found that the influence of this gas on the respiration varied with the animals experimented upon ; that in man the respirations became more ample without changing their rhythm. In the rabbit, at the commencement of the inhalations, respiration becomes more frequent and fuller, but becoming slower at the moment that anæsthesia is complete. In the dog the respiratory movements gradually increase in frequency and fullness up to the moment of anæsthesia, at which time the movements are panting, and may become suddenly arrested, the stoppage being more or less prolonged, and sometimes proving fatal. As regards the influence of nitrous oxide on arterial pressure, Dr. Lafont found also a variation, according to the animal experimented on. On the rabbit the pressure remains stationary, or becomes slightly lower. In the dog it rises gradually up to the moment of anæsthesia, and then becomes stationary. At the commencement of the inhalations there is an increase in the frequency of the pulse in all animals. When anæsthesia is complete, the movements then become slower, and the heart may often be arrested. This slowing of the pulse may persist even after recovery of consciousness. The increase of pressure observed in the dog Dr. Lafont found to be due to the condition of agitation of the animal, while the slowing of the pulse he attributes to stimulation of the pneumogastric nerve, since it is absent when atropine is given.—*Therapeutic Gazette.*

HYPER-SECRETION OF THE SALIVARY GLANDS.

BY B. P. HALL, M.D., RICHMOND, O.

The secretions of the salivary glands are possessed of considerable pathological as well as physiological importance, enough, at least, to admit of independent remarks, for reasons sufficiently apparent.

It is an anatomical fact that medulated nerve fibres supply, and terminate their destination in, the salivary glands.

Impressions operating through the nervous system are capable of increasing the salivary flow. The sight, odor or thought of agreeable and nutritious articles of food and deglutition are quiescent without the presence of mechanical irritation in the buccal cavity. All are acquainted with the stimulation of the salivary flow by such impressions—a complete physiological process.

The ptyalism of pregnancy being a semi-pathological condition. There are a number of therapeutic agents which are designated as sialagogues, that may increase the flow. They are specifically of classes. First, those that act through the circulatory apparatus; second, those which act immediately on the salivary organs. The peculiar characteristic effects of the liberal administration of some of the preparations of mercury, jaborandi or potassium iodidi, exhibited for its salutary action or for its various experimental uses, may be manifested by the constitutional action of the medicine on the lymphatic grandular system producing a pathological secretion from it. Those producing a copious flow from their local action, such as pyrethrum, xantoxylum, zingiber and *et cetera.*

But the occasional recurrence of a decided *spontaneous hypersecretion* of the salivary glands, irrespective of the action of these drugs, mark another of the variety of the bodily diversities attributable to our race, which for convenience may be nomenclatured *idiopathic ptyalism.* The malady is not usually a very grave or common one *per se*, but is ordinarily commented on in isolated cases and complicated with or as a *sequela* of a precursory cause. Text books say little of the disagreeable tróuble, Sir Thomas Watson barely gives it a passing notice.

The case that attracted my attention *parri passu* of apparent spontaneous salivation was in Jan. '86. Mrs. S., age 71, American by birth, married twice, mother of six children, habits good, body corpulent. During the month of August, 1885, the patient was attacked by an excessive secretion of the salivary glands, causing a continual flow night and day. During the hours of repose at least a quart of saliva would dribble from the mouth thereby soiling the pillow and other adjacent linen. It was for this cause that professional aid was sought to alleviate the disagreeable trouble. Upon an investigation I observed her statements were genuine that there was a never ceasing flow from the mouth, enough to authenticate the statement that two quarts passed from her mouth every twenty-four hours, aside from the amount secreted and used for mastication and deglutition. The tongue was slightly furred. There was no soreness of the mouth, tongue, lips or throat, no tenderness or enlargement of the glands of the throat or neck. She had but two teeth, both canines in the lower maxilla and well preserved, all of the emunctories performed their functions normally, hence the patient indicated fair health for her age.

Strange to say, the ptyalophthisis brought about no unfavorable results. The patient had been a sufferer of a cardiac disease for a score of years, which I diagnosed valvular insufficiency and excentric hypertrophy which was yielding to a fatty degeneration. Alas, without the special privilege of any farther investigation she suddenly was called to her celestial abode where peace and happiness reigneth forever.

I attributed her sudden death to a probable over accumulation of blood within the cavities and consequent paralysis of the muscular walls of the heart from distension as a result of extreme regurgitation.

It was under these circumstances that I designated the case an idiopathic affection, but not in a literal sense, as I was not permitted to watch the march of phenomena of the so-called functional disorder and thereby ascertain its etiology.—*Cin. Lancet and Clinic.*

Editor's Specials.

"Write the Vision and make it plain."

CURIOUS FACTS IN CHEMISTRY.

In speaking of chemical affinity we have more than once alluded to the fact of its modification by quantity of matter. It is our present purpose to call attention to an apparent, if not a real anomaly in reference to this.

To set forth the principle ordinarily governing in such action, we can think of no illustration that is better than the peroxide of hydrogen, spoken of on another page.

When oxygen and hydrogen are united in the proportions of eight parts by weight of the former to one of the latter, we have the stable compound known as water; and the elements are very firmly held together. Were it not for their elasticity—their desire, as it were, to assume their legitimate gaseous forms, it would be almost impracticable to separate them. All know that water is not very easily decomposed.

But by steps not necessary to describe here, the hydrogen can be induced to combine with, and thus take up another equivalent of oxygen, or eight more parts, and thus the peroxide of hydrogen is formed, composed of one part of hydrogen united with sixteen parts of oxygen. These latter parts of oxygen are held by a very feeble affinity; and contact with almost any oxidizable substance will result in decomposition, eight parts of oxygen being given off, and the compound being reduced to water. In peroxide of hydrogen, as well as in water, the elements are held together by the force known as affinity, but the quantity of oxygen being almost too great for its power, half the quantity held is readily separated. The memory may be aided here by a simple illustration. A police officer may be able to hold one culprit without difficulty; but he may find so much effort necessary in holding two, that one or the other may be easily rescued by his comrades in vice.

But consider nitrogen instead of hydrogen. Oxygen unites with it in several proportions forming a variety of separate and distinct substances, widely differing in appearance and properties. And at one point here the rule as to modifying influence of quantity of matter seems to fail. Of these several compounds, nitrous oxide is the least oxidized, and yet it parts with its oxygen very readily. Eight parts of oxygen combined with fourteen of nitrogen form nitrous oxide, and sixteen of oxygen united with fourteen parts of nitrogen form nitric oxide. Now it will be noticed that nitric oxide bears the same relation to nitrous, that peroxide hydrogen does to water; but here the analogy stops. Nitrous oxide is so ready to give up its oxygen that the gas is decomposed so readily that a spark is rekindled into flame almost as if it were immersed in pure oxygen. The two elements are held together by the feeblest possible affinity.

But *nitric* oxide is decomposed with difficulty. Instead of the nitrogen there readily giving off its oxygen, this gas takes more oxygen, from the atmosphere or from almost anything containing it. And so energetic is the affinity that the gas has scarcely risen from the liquid in which it is generated till it has taken oxygen from the atmosphere sufficient to change it to nitrous acid, two steps higher in the scale of oxidation. This can be demonstrated by a very simple experiment. Take a common glass vessel and, put a few scraps of copper in it, and partly fill with nitric acid. Bubbles of gas are seen rising through the liquid, and these are nitric oxide, a transparent colorless gas. But before this gas has escaped from the mouth of the glass it has changed to an orange or red color, due to nitrous acid.

The energy with which nitric oxide takes oxygen from other substances explains why it is such a deadly poison. Could it reach the circulation, it would at once take the oxygen from the red corpuscles, and thus destroy their function; while, as it would thus be converted into nitrous acid, it would destroy the entire corpuscle by corrosion. And this explains the principal danger in the practical use of nitrous oxide by inhalation. If a very minute proportion of nitric oxide is mixed with the nitrous, and the mixture is inhaled, the air passages are corroded by nitrous acid—yes, still worse—for in the presence of moisture, nitrous is changed to nitric acid. And can any one be surprised that great mischief is done.

It is very important, as well as a very interesting fact that whenever nitrogen is oxidized to any extent, if air and moisture are present, the oxidation rapidly runs up to the highest possible degree known as nitric acid,

The first degree, called nitrous oxide, or protoxide of nitrogen, is very easily decomposed; and nitric acid readily yields three of its five equivalents of oxygen, being thus reduced to the second degree, called nitric oxide, which, as has been said, is rapidly run up to nitrous acid, and, with the aid of moisture to nitric acid.

In view of these various changes, there is no element that calls for more careful study than nitrogen, yet, as it is looked upon as a sort of passive element, none is, perhaps, so much neglected. Let it have close attention.

PEROXIDE OF HYDROGEN.

When a spade is called a spade, Patrick O'Rafferty knows what is meant as well as ever did Noah Webster. But when it is called a ligneo-ferruginous implement of terraqueous excavation, Patrick is puzzled, and the compound, comminuted, verbose title would have caused even Noah to open his eyes. Yet there seems to be a disposition to search for new words, or at least for those not in common use. A worthy and much esteemed member of our own profession once undertook to teach us a new, and perhaps universal language, by giving us one lesson a year, one of these lessons being limited to two words and their derivatives. As there are not over one hundred and twenty-five thousand words in our language, the time would not have been long (that is in the eyes of him with whom "a thousand years are as one day"), yet some became impatient and we believe the effort was abandoned.

Peroxide of hydrogen is an old medicinal agent that has lately received renewed attention. And being viewed from new standpoints, and used in new processes, it is not strange that new names are thought of and applied to it as a whole, or oftener, perhaps, to its active principle in therapeutics. Accordingly we hear it spoken of as "compound oxygen," liquid oxygen, etc.; yet such terms tend only to confusion. As a general rule it is best to adhere to plain ordinary names. To justify the use of the name, "liquid oxygen," it is necessary to have oxygen gas compressed to the liquid state. We have solutions of oxygen in water and in other liquids, but such are, by no means, liquid oxygen.

The *modus operandi* of a medicinal agent is often hard to understand; but when the therapeutic influence of active oxygen is clear to the mind, it will not be hard to understand the action of the peroxide on morbid tissues. In accord with the old nomenclature, this substance is described as being composed of one equivalent of hydrogen combined with two of oxygen. It is difficult for the *one part* of hydrogen to hold sixteen parts of oxygen, and hence almost anything that has any affinity for oxygen can take an equivalent, or eight parts, from it. As the oxygen was active when it took the hydrogen, it is active when it lets go, and hence in the oxygen we get from the peroxide we have ozone; and if this is remembered and properly appreciated, we will be able to use the peroxide of hydrogen intelligently, and will have no excuse whatever for its empirical use.

It is well known that when this agent is applied within an abscess, or in a supurating pocket, effervescence occurs. There is some difference of opinion as to how this is caused. Some have said that the bubbles are caused by escaping oxygen; but this seems hardly satisfactory, for if this gas is set free by its affinity for oxidizable matter, does it not follow that it at once combines with the materials which take it from the hydrogen? Pus contains carbon, and when this is oxidized, carbonic oxide or carbonic acid results; and being gaseous, either one or both may cause the effervescence, and hence, though the oxygen thus escapes, taking part in the bubbling, yet it does not escape as oxygen.

When oxidation is desired as a local action, we know of no better or more convenient medicinal agent than the one under consideration.

OBITUARY.

Sometimes it is hard to guide the pen; and sometimes thought almost refuses to take the shape of words; and the weight of such a time presses our pen now almost to stillness.

Jonathan Douthett, D.D.S., is dead; and by a mysterious providence himself and wife crossed the dark river of Death, and landed on the bright shores of eternity together. Hand in hand they passed through life; and with linked hands, and hearts that beat as one, they have passed into the realms of Death.

In 1853 and 1854 Jonathan Douthett attended lectures in the medical department of the University of Michigan, not with the expectation of nor with the intention to practice medicine, but to prepare him the better to practice dental surgery, his favorite field of professional life. The year following he attended lectures in the Ohio College of Dental Surgery, and received the degree of D.D.S. His eyes had been worsted years before by an attack of confluent small pox, and in the close study of these two years they gave way, and it became impracticable for him to practice dentistry. Hence, for some years, he carried on a fruit farm, but later he raised fine live stock, and was highly successful.

For almost forty years he has been to us as a brother beloved —a true friend, and genial companion. A member of our family, —a wife's sister—became his wife in 1858, and together they traveled life's journey, till, on the evening of April 16th, 1886, their cottage home was burned to ashes, and they perished in the flames. Their pastor and other friends passed their residence between ten and eleven p. m., and all was quiet and still, yet before midnight their bodies were burned beyond recognition.

There is no light as to the origin of the fire, and it is useless to guess at that which only eternity can reveal.

Dr. D. and wife were earnest, mature christians, and as we recover from the fearful shock, we mourn not as those without hope, for one who has borne the burden announces himself as "the resurrection and the life."

Societies.

"Wherewith one may edify another."

Iowa State Dental Society, Iowa City, Tuesday May 4, 1886.

Kansas State Dental Association, Topeka, Tuesday May 4, 1886.

Northern Ohio Dental Association, Cleveland, Wednesday, May 12, 1886.

Illinois State Dental Society, Rock Island, Tuesday, May 11, 1886.

Mad River Valley Dental Society, Dayton, Tuesday, May 18, 1886.

Kentucky State Dental Society, Louisville, Tuesday, June 1, 1886.

Indiana State Dental Association, Indianapolis, Tuesday, June 29, 1886.

Southern Dental Association, Nashville, Tenn., Tuesday, July 27, (instead of May 25), 1886.

American Dental Association, Niagara Falls, Aug. 3, 1886.

THE AMERICAN DENTAL ASSOCIATION.

The votes of nearly all the members have been received. A majority of the votes cast are in favor of Chicago over all other places. And a very large majority pledge their attendance if the meeting shall be held in Chicago. But in deference to the minority and for the sake of harmonizing all differences, as Chairman of the Executive Committee of Arrangements, I hereby, with the consent of my Colleagues, announce the next place of meeting to be at Niagara Falls, August 3.

State and local dental societies should remember that every local society which has adopted substantially the code of ethics of the American Dental Association, is entitled to one delegate for every five members. Appoint your delegates soon and let all unite in making this the largest and most profitable meeting of the Association yet held.

Information concerning hotel and railroad rates will be given later.

J. N. Crouse, 2101 Michigan Avenue,
Chicago, April 16, 1886. *Chairman of Executive Committee.*

THE MAD RIVER VALLEY DENTAL SOCIETY

Will hold its annual meeting in the parlor of the Phillips House, Dayton, Tuesday, May 18th, 1886. *One day only.* Sessions begin at 10 o'clock, A. M., and 2 P. M.

SUBJECTS FOR DISCUSSION.

1. The advantages of making rubber plates before attaching the teeth.
2. Every day practice.
3. The treatment of pulpless teeth.
4. The advantages of amalgams and oxyphosphate combined as a filling material.

NORTHERN OHIO DENTAL ASSOCIATION.

The twenty-seventh annual meeting will be held in Cleveland, Ohio, Tuesday and Wednesday, May 11 and 12, 1886, commencing at 10 A. M., Tuesday. Meeting to be held at Cogswell's Dental Depot, No. 29 Euclid Avenue. A cordial invitation is extended to all the profession.

ORDER OF BUSINESS.

1. Reading of minutes.
2. Reports of officers and committees.
3. Reading of essays.
4. Discussions.

Election of officers, Wednesday, 10 A. M.

SUBJECTS FOR DISCUSSION.

1. Diagnosis.
2. Different materials for, and methods of filling teeth.
3. The relative duty of operator and patient.
4. Incidents of office practice.

H. F. Harvey, *Cor. Sec.* D. Gibbons, *President.*

CHICAGO DENTAL SOCIETY.

At the annual meeting April 6th, 1886, the following officers were elected for the ensuing year:

Dr. Frank H. Gardiner, President; Dr. P. J. Kester, 1st Vice President; Dr. W. B. Ames, 2d Vice President; Dr. J. G. Reid, Recording Secretary; Dr. A. E. Matteson, Corresponding Secretary; Dr. E. D. Swain, Treasurer; Dr. A. W. Harlan, Librarian; Drs. L. L. Davis, J. W. Wassall, B. L. Rhein, Board of Censors; Drs. Geo. H. Cushing, J. A. Swasey, E. Noyes, Board of Directors.

A. E. Matteson, *Cor. Sec'y.*

CHICAGO COLLEGE OF DENTAL SURGERY.

The fourth annual commencement exercises of the Chicago College of Dental Surgery, were held at the First Methodist Church, Chicago, on Wednesday afternoon, March 31st, 1886.

The class valedictory was delivered by Robert E. Moon, D.D.S., and the address to the graduates by W. L. Copeland, M. D., C. M., M. R. C. S., Professor of Anatomy.

The number of matriculates for the session was eighty-one, an increase of thirty-one over the previous course.

The degree of D. D. S. was conferred on the following graduates by Dr. James A. Swasey, President of the Board of Directors:

Henry Fenn Carson, Illinois; Emory Melvil Cheadle, M. D., Oregon; Louis Clusmann, Illinois; Joseph Grant Emery, Illinois; Gilbert Walter Entsminger, Illinois; Frank Eshbaugh, Illinois; Ernst August Huxmann, Illinois: Henry Frederick Marcoux, Illinois; Joseph Perry Mertes, Wisconsin; Theodore Felix Molt, Illinois; Robert Ellsworth Moon, Indiana; Otto Henry Staehle, Illinois; James Stewart, Illinois; Thomas Benton Wheeler, Illinois; Ellsworth Otis Whipple, New York; Alfred Rogers Wilcox, Illinois.

T. W. Brophy, *Sec'y.*

ANOTHER DENTAL SCHOOL.

The Central Tennessee College (for colored people) has completed arrangements for a school of dentistry in connection with Meharry Medical College. It will be under the direction of a graduate of the Dental Department of Vanderbilt University, and it will open on the first Monday in October. The requirements for admission will be the same as for medical students. It will require two years to complete the course, and the tuition will be thirty dollars per session.

PROPOSED NEW DENTAL LAW.

We give below a revision of the bill as published on page 92 February number of the Journal.

TO INSURE THE BETTER EDUCATION OF PRACTITIONERS OF DENTAL SURGERY AND TO REGULATE THE PRACTICE OF DENTISTRY IN THE STATE OF OHIO.

Be it enacted by the General Assembly of the State of Ohio:

Section 1. It shall be unlawful for any person who is not at the time of the passage of this Act engaged in the practice of dentistry in this State, in conformity to the laws of Ohio, existing at the time of the enactment hereof, to engage in such practice, unless such person shall have obtained a certificate as hereinafter provided.

Sec. 2. A Board of Examiners, to consist of five practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this Act. The members of said Board shall be appointed by the Governor, who shall select them from ten candidates, whose names shall be furnished him by The Ohio State Dental Society. The term for which the said members of said Board shall hold their offices shall be three years, except that two of the members of the Board, first to be appointed under this Act, shall hold their office for the term of one year, two for the term of two years, and one for the term of three years, respectively, and until their successors shall be duly appointed and qualified. In case of a vacancy occurring in said Board, such vacancy shall be filled by the Governor in conformity with this section.

Sec. 3. Said Board shall organize immediately after their appointment by choosing one of its members President and one the Secretary thereof, and it shall meet at least once in every year and as much oftener and at such time and places as it may deem necessary. A majority of said Board shall at all times constitute a quorum, and the proceedings thereof shall, at all times be open to public inspection.

Sec. 4. Within six months from the time that this Act takes effect, it shall be the duty of every person who is now engaged in the practice of dentistry in this State, to cause his or her name, place of business and residence to be registered with said Board of Examiners, who shall keep a book for that purpose. The statement of every such person shall be verified under oath before a Notary Public, in such manner as may be prescribed by the Board of Examiners. Every person who shall so register with said Board as a practitioner of dentistry, who has fully complied with the provisions of the law as set forth in Section 6991, Revised Statutes of Ohio, passed March 10, 1873, shall receive a certificate to that effect, and may continue to practice as such without incurring any of the liabilities or penalties provided in this Act, and shall pay to the Board of Examiners for such registration the sum of one dollar. It shall be the duty of the Board of Examiners to forward to the County Recorder of each county in the State a certified list of all persons residing in his county who have registered in accordance with the provisions of this Act, and it shall be the duty of all County Recorders to register such names in a book, to be kept for that purpose.

Sec. 5. Any person, who shall so desire, may appear before said Board at any of its meetings and be examined with reference to his or her knowledge and skill in dental surgery, and said Board shall issue to such person as it shall find to possess the requisite qualifications a certificate to that effect in accordance with the provisions of this Act. Said Board shall also indorse as satisfactory, diplomas from any reputable dental college, and shall be competent judges of the status of the college issuing the diploma; the holder of such diploma shall furnish evidence to the Board of his or her right to the same; after which the said Board shall issue certificates to that effect within ten days. All certificates issued by said Board shall be signed by its officers, and such certificates shall be prima facie evidence of the right of the holder to practice dentistry in the State of Ohio.

Sec. 6. Any person who shall violate any of the provisions of this Act shall be deemed guilty of a misdemeanor, and, upon conviction, may be fined not less than fifty dollars nor more than two hundred dollars, and shall be committed to the county jail until such fine be paid, or confined in the county jail for each and every offense. And it shall be incumbent on the defendant to show that he has authority under the law to practice dentistry to exempt himself from the penalty hereby prescribed.

Sec. 7. All prosecutions under this Act shall be by indictment or upon information before any court of competent jurisdiction in the county where the offense was committed and all fines imposed and collected under the provisions of this Act shall be paid into the treasury of the county where such conviction shall take place, for the use of the common schools within such county.

Sec. 8. In order to provide the means for carrying out and maintaining the provisions of this Act, the said Board of Examiners shall charge each person applying for a certificate and having a diploma from a reputable dental college a fee of one dollar, and each other person appearing before them for examination for a certificate of qualification a fee of ten dollars, which fee shall in no case be returned, and out of the funds coming into the possession of the Board from the fees so charged, and penalties received under the provisions as specified in section 9 of this Act, all legitimate and necessary expenses incurred in attending the meetings of said Board shall be paid. And no part of the expenses of the Board shall ever be paid out of the State Treasury. All moneys received in excess of expenses, above provided for, shall be held by the Secretary of said Board as a special fund for meeting the expenses of said Board, and carrying out the provisions of this Act, he giving such bonds as the Board shall from time to time direct. And said Board shall make an annual report of its proceedings to the Governor, by the first day of January of each year, together with an account of all moneys received and disbursed by them pursuant to this Act.

Sec. 9. Any person who shall receive a certificate from said Board to practice dentistry, shall cause his or her certificate to be registered with the County Recorder of the county in which such person may reside, and the County Recorder shall charge for registering such certificate a fee of fifty cents. Any failure, neglect, or refusal on the part of any person holding such certificate to register the same with the County Recorder as above directed, for a period of three months, shall work a forfeiture of the certificate; and no certificate when once forfeited shall be restored, except upon the payment to the Board of Examiners of the sum of twenty-five dollars, as a penalty for such neglect, failure, or refusal.

Sec. 10. Any one who shall knowingly or falsely claim or pretend to have a certificate granted by the Board of Examiners, under and pursuant to the provisions of this Act, or who shall falsely and with intent to deceive the public, claim or pretend to be a graduate from any incorporated dental college, shall be deemed guilty of a misdemeanor, and shall be liable to the same penalty as provided in section 6.

Sec. 11. Nothing in this Act shall be so construed as to prohibit any practicing physician or surgeon from extracting teeth.

Sec. 12. That original sections 4404 and 6991 be and the same are hereby repealed; and this Act shall take effect and be in force from and after its passage.

A. FOOLISH SOCIETY.

The St. Louis Medical Society has passed a resolution positively prohibiting the publication of its transactions, or any part or synopsis thereof, in any medical journal, and directing that "no member of or visitor to the Society shall transcribe its proceedings, or any part thereof, for publication, nor publish any epitomization or synopsis of the same."

The object of this act was to prevent the publication of partial and mutilated reports.

The Society is evidently neither wise nor experienced. In time it will learn that seventy-five per cent. of society discussion is rubbish, and that medical journals cannot publish them in full and live. No society can long force upon the public, by "Transactions" or "organs," material not worth publishing.—*Medical Record.*

Our Aftermath.

ARSENIC AND ACONITE FOR DESTROYING PULPS.—

℞ Acidi Arsenii gr. iv.
Extracti Aconiti gr. xx. m

In the majority of cases it causes no pain in applying, and none whatever afterwards; sometimes, however, it will sting. On cross-questioning the patients afterwards, they have assured me that the pain gradually passed away and was entirely gone within an hour, not to return during the whole time it has been in the tooth. As the extract dissolves very readily in water, I would state that the dryness of the cavity during the whole time of applying it, is an absolute necessity, it being otherwise next to impossible to place it properly in position. Arsenic and powdered aconite root is almost useless, the root not being absorbed. If it should be preferred to form a paste by dissolving the above for the more easy spreading on wool, a small quantity only should be dissolved at a time, as it is apt to become moldy if kept. Apply by putting a sufficient quantity on a piece of damp wool, and carrying it to its place with a pair of small plugging tweezers, and seal with mastic, taking care not to cause any pressure on the pulp. The time taken to devitalize: 48 hours. Have had no ill effects from the aconite, although in use more than two years.—C. A. CLARK, D.D.S., in *Brit. Jour. of Dental Science.*

THE INFLUENCE OF CASCARA SAGRADA ON THE DIGESTIVE SECRETIONS.—Cascara sagrada has been experimentally studied by Dr. M. Tschelzow (*Centralb. für die Gesammte Therapie*, August, 1885), who comes to the following conclusions:

First. Cascara sagrada is useless when a rapidly-acting cathartic is desired.

Second. It only acts as a cathartic when introduced into the stomach. When injected subcutaneously or directly into the blood-vessels it produces no evacuation of the bowels.

Third. Cascara sagrada does not increase the secretion of saliva.

Fourth. It produces an increase in the secretion of gastric juice, which continues even during digestion.

Fifth. It increases both the pancreatic and biliary secretions.

These results were obtained when the drug was directly introduced into the stomach. When injected into the circulation, the animals rapidly passed into a condition of collapse, which soon proved fatal, or they recovered but very slowly; while the blood-pressure was rapidly reduced, even after previous section of the pneumogastrics.

A PECULIAR FUNGUS.—Dr. E. M. Crookshank in a recent paper on the cultivation of bacteria, (*Journ. Roy. Micr. Soc.*) describes and figures a peculiar fungus, actynomyces (or the 'grey fungus') the cause of a singular disease known as actinomycosis, occurring rarely in man, but not uncommonly in cattle. The fungus is believed to gain an entrance to the animal by the mouth, through the food, or possibly through the medium of a wound of the gums or a carious tooth. It sets up inflammation, resulting in the formation of a new growth, resembling a tuberculous nodule, which eventually terminates in large tumors. In cattle the lower jaw is usually affected, and then the upper jaw, and neighboring parts, but the parasite may also occur in the lungs and the subcutaneous and intermuscular tissue. In man the pulmonary formations tend to break down early, forming fistulæ and sinuses. In other cases the disease may originate in the intestines, or occur in the bones or other tissue. It may be transmitted by inoculation among cattle and rabbits, and presumably to man. The fungus is visible to the naked eye, appearing in the form of rosettes composed of club-shaped elements, and either colorless or of a yellowish or yellowish-green tinge.—*Science.*

GOUTY TEETH.—J. Milner Fothergill, M.D., in the London *Lancet*, says, on the diagnosis of gout: There is little doubt that the configuration of the teeth was a distinct value. The teeth are solid, and, in the "Norse" type, massive. They are blunt and thick at the edges, and worn down. They have a great tendency to come out without any caries, but from an osteitis, extending from the neck along the fang to the root. The incisor tooth is more worn down than the canine or molar teeth are. The centre of the tooth-surface is also of dark color. When the gouty patient shows his teeth, their build and conformation are usually at once to be detected; while often the gum is seen retracted. Sometimes the front teeth of the upper jaw are very massive. Some years ago Dr. William Stewart took casts of the teeth of a number of undoubtedly gouty patients. One cast shows the teeth in a comparatively early stage. They are regular, well shaped, solid, if not large, teeth, beginning to wear down distictly on the surface. Such worn-down teeth, in my experience and opinion, belong to gouty persons.

DONALDSON'S NERVE BRISTLES AND PULP CANAL CLEANERS.—We used these bristles from the time they were first placed on the market and never had one break in a canal. The S. S. White Mf'g Co. some time since sent us, by request of Dr. Donaldson, some continuous barbed pulp canal cleaners which we have tried and found them fully up to our expectations.

LEA & SON'S ENCYCLOPEDIA OF DENTISTRY—An important work on Odontological science, now publishing, will contain extended illustrated articles on the teeth of vertebrates, both fossil and recent, and of invertebrates,—on the former by Mr. J. H. Wortman, and on the latter by Mr. W. H. Dall.—*Science*

THE LAST TEETH.—"What are the last teeth that come?" asked a teacher of her class in physiology. "False teeth, mum," replied a boy who had just waked up on the back seat.

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. VI. JUNE 1, 1886. No. 6.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

A CASE IN PRACTICE.

BY GEORGE W. KEELY, D.D.S., OXFORD, OHIO.

THE case illustrated below is that of a boy aged nine years, his father being a German and his mother of Irish descent, both having normal dental arches. The boy's dental arches are unusually well developed for one of his age. The deformity as seen in Figure 1 was *wholly* caused by the retention of the superior temporary centrals until after the permanent ones made their appearance through the gum, and the latter were thus given an inward incline.

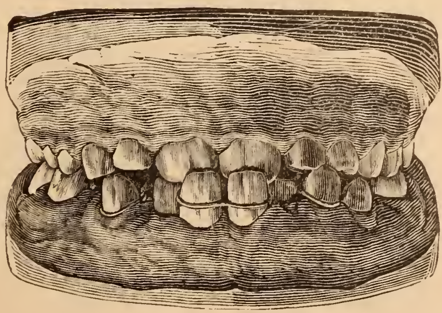


FIG. 1.

When the offending temporary incisors were removed we instructed the boy to frequently press the erupting permanent ones outward with his thumb, and use a stick or lead pencil as an inclined plane, and also requested his parents to see that this was done, warning them of the consequences of neglect. The advice was ignored, and the result can be seen. It is a very easy matter to bring such erupting teeth into line if this simple remedy is applied before the teeth are caught inside the inferior ones. Cases like this frequently occur among our little patients and are the most simple to treat. We have often brought such teeth into line (before being caught) by tying a cotton thread around the cuspid on one side, carrying it over the lateral, and under the erupting teeth, over the other lateral, drawing it tight and then tying it to the other cuspid. By being careful to keep the thread dry when adjusting, the moisture will contract it, and it is rarely necessary to repeat this more than three or four times before the teeth are in a safe position to prevent them being caught. Then hold them in place with a waxed thread for about one week, you can then dismiss your little patient. Recently an eight year old boy came to me, his temporary centrals were in place, the right permanent central was caught about one-sixteenth of an inch—the left one just appearing. We removed the temporary centrals and gave him a stick of wedgewood, flattened at each end, to use as an incline to press on the left erupting tooth. When we saw him again two months later, we found that he had moved the right one out of its lock, and also got the other one in a safe position. We mention this to show what can be done by perseverance and pluck. In this case the occlusion forced the inferior centrals out, making them loose and sore.

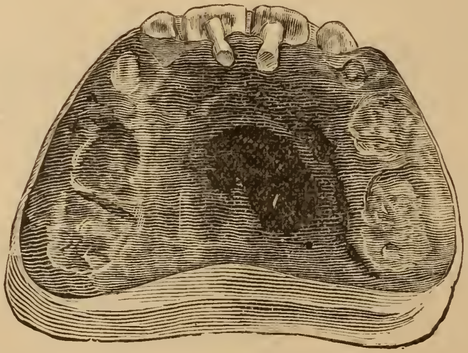


Fig. 2.

Figure 2 shows the apparatus used to bring the offending centrals out of their lock and into line. A perfect impression and model were taken, a trial plate fitted over the roof of the mouth and posterior teeth, a bite taken to raise the teeth so the offending centrals would swing clear when moved to their normal position, and the patient have a masticating surface on the plate. Holes were drilled in the plate opposite the centrals, the plate reaching up to the cutting edges of the teeth. Sea tangle tent was first used to start them, then pins made from well seasoned pine. The plate was removed daily and cleansed, and new pins adjusted. In less than ten days they were in position, and a retaining plate adjusted. During the operation he attended school regularly. The inferior teeth were then brought into line in a few days; by the use of a narrow piece of rubber (cut from rubber dam) one end of this was tied with a thread, and the thread tied on one cuspid, the rubber passed back of the lateral and in front of the centrals, back of the other lateral, drawn tight, and tied with a thread to the other cuspid. In a few days all four inferior teeth were in line as shown in Figure 3.

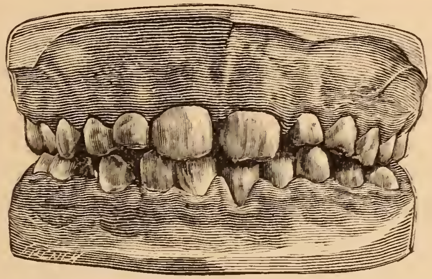


Fig. 3.

During the operation the boy made no serious complaint, and reported being able to eat his rations regularly. In this case, and the one in March number, we were ably assisted by our partner, Dr. O. A. Beeks.

DENTAL HABITS.

BY E. H. RAFFENSPERGER, D.D.S., MARION, OHIO.

In reading the dental literature of the present day, I find that most of the articles seem to relate to the new theories, methods, and ideas of the writers, often indeed "pet hobbies," if such they may be called, but all relating to the *practice* of dentistry.

I have often wondered why some one did not write something relating to the dentist and his habits, or rather a dental "*Don't*." There are a great many little things that some of us never think of which go far towards the success of a dentist, not merely in his work. I write more particularly of his habits. Our profession is one that requires the utmost fastidiousness on the part of our patients; but too many of us forget this, especially the "country dentists." Now I do wish more of my country brothers could visit and notice the workings of a well regulated city dental office. And how some of the city brothers would be shocked to visit some of their rural brethren! Yes they would be utterly disgusted to find a dentist working (say for a lady) in his shirt sleeves, often with his vest off, smelling strongly of tobacco, hands dirty, office generally filthy, and at the same time hear him "*blowing*" about how many teeth he could pull in a minute, and all that sort of thing. This is what is going on now in many of our country dental offices, and the dentists seem to see nothing at all out of the way. This is just the point I wish to get at. A dentist should strive to avoid all those habits that are objectionable to his patients. The idea of working for a fair patient in one's shirt sleeves is disgusting. No gentleman has a right to appear in the presence of a lady when he is thus attired, or rather *unattired.* I have seen some who even removed the vest. How much neater and more attractive a clean, white, thin coat would look! It would certainly be just as comfortable. Our profession is not one of hard labor. A laboring man has some excuse for removing the coat, but a dentist—none. It is simply *rude.* The mere act of removing the coat tends to intimidate any nervous person, who imagines something dreadful is going to be done. Certainly it is not very professional for a dentist to appear on the street with his coat off; but how many do this very thing? yes, with a cigar in the mouth, at that! Tobacco ought to be the bane of dentists, but it never will. If we must indulge, let it be after office hours. To many ladies the smell of tobacco is sickening. Well do I remember (to my sorrow) a case I lost, because the patient noticed the odor of tobacco about me.

Keeping the hands clean is another "point" some forget. I have seen dentists take the hands from one patient's mouth and put them in the mouth of another without washing. This is disgusting, to say the least. I have seen the same performance with a napkin. Water is cheap, and we ought not to be afraid of it. It cannot hurt us no matter how much we use, only keep clean, not only in person, but in our office. It is a small matter, but it may bring us in many extra dollars, if we keep an attractive office. Only a few days ago a lady paid me a compliment, by saying my "office did not look like an office, more like a parlor." This is what we all should wish. Make the office look as little like an office as possible, keep all dental appliances out of sight. Many a timid patient has been frightened out of a dental office by merely seeing instruments, etc., lying about. Have plenty of bric-a-brac around to attract the patient's mind, as far as possible, from the operation. Cheerful reading matter, pictures, flowers, etc., all have a pleasing effect in that direction. Sometimes we find the cuspadore stained with blood. Keep it clean by all means. Do the same in regard to the instruments. Let us remember that "cleanliness is next to godliness" in our profession.

In conclusion I would like to say something about our talk and conversation. Dentistry has often been called a "*trade.*" It is, if we make it so. One of the worst "*giveaways*" (if I may use slang) of the dental profession, is to hear a dentist talking without regard to grammar, or even good sense. What a pity every young man who enters a dental college cannot be compelled to show a diploma from some school or college, and give some evidence that he will not be a drawback to the profession by being a blockhead and ignoramus. Dentistry would certainly take a rise. We can talk at least professionally, if not grammatically. We can use dental terms and expressions. I know of one dentist who always speaks of an impression of the mouth, as the "*measure*" of the mouth. If we wish to make any impression whatever upon our patients, we must do so by our conversation. Bragging will not make up for any attainments we lack. It is better to confess a fault than try to smooth it over by "*blowing*," and trying to convey the idea that we really are of some account. I hope the new dental law will pass so some of the quacks and "blow-hards" who now call themselves dentists, may be weeded out, and that the time may come when the dentist will be known by his elegant and refined manners, and the dental office may lose many of its present disgusting features, and become one of the most delightful places a person can find, so that the city dentists will not be shocked when they call upon their country brethren at anything they may witness. All this can be easily brought about, if we attend to these little, seemingly insignificant points.

BRIDGE WORK.

BY JAMES E. LOW, D.D.S., CHICAGO.

[Read before the Mississippi Valley Dental Society, Cincinnati, March, 1886.]

The question, how can the partial loss of teeth be restored with the least possible injury and inconvenience to the wearer, is of so much importance that there is but one question greater to the conscientious dentist and patient, that of preserving the natural teeth; thereby avoiding the necessity of interfering with the natural condition. For thousands of years the importance of these organs, not only to masticate our food properly, but to keep in harmony and preserve a symmetrical appearance of the combined features of the face, has been recognized. In the early history of mankind the bones of animals were carved in the shape of teeth and worn. Holes were drilled on either side of the denture and tied to the teeth adjoining with ligatures. These crude dentures with all their imperfection were considered ornamental to persons without teeth, although of but little use, if any, for mastication.

Notwithstanding their crudeness, and the fact that the acids of the mouth penetrated the bones so carved and made them offensive, the balance was drawn in their favor, and the higher classes wore them. This seems to have been almost the first manner of restoring the partial loss of teeth. Where roots remained, transplanting was practiced among a certain class able to pay some poor person for losing theirs.

This in most cases proved unsatisfactory, like nearly all previous attempts to restore partial loss of teeth, and I might add, nearly all of the present. Sometime later, natural teeth, those lost by disease of the gums and those of dead people, were used to supply vacancies, by first making a plate to fit the vacancy to be supplied. Clasps were soldered to this narrow plate, which rested on the gum to hold the denture in position by clasping the teeth adjoining those to be supplied. Pins were soldered to these narrow plates for each tooth to be supplied; holes were drilled longitudinally into the pulp cavity in the teeth; the teeth were then slipped over the pins and riveted fast on the lingual side.

Thus the toothless sufferers struggled along from the use of white wax crowded between the teeth and blocks carved from bones attached with strings and wires twisted around the natural teeth with screws inserted into the natural root to hold them in position and natural teeth fastened to clasps as stated, until the porcelain tooth was invented.

This obviated one of the principal objections, it being incorruptible, and not affected by the acids of the mouth. But the objectionable clasp attachments still remained, causing much trouble and annoyance by their constant motion on the teeth clasped, which in many instances soon became sensitive, and loosened.

The next supposed advance was to abandon the clasp attachment, and cover the roof of the mouth, holding the denture in place by atmospheric pressure. The clasps were supposed to be more objectionable than the discomfort and inconvenience of wearing the plate over the roof of the mouth; but time and experience have thoroughly proven that more harm has resulted from their use than the clasp plate, as they not only injure the natural teeth by their constant motion, but most plates of this class are fitted close around the necks of the teeth, and cause recession of the gums by the inflammation produced; not only this, but thousands of persons wearing these plates covering the roof of the mouth were soon found to be suffering from inflammation and thickening of the mucous membrane, red and inflamed spots appearing there, and often, where there was a lagging of vitality, either from blood poison or otherwise, these plates set up inflammatory action, which many times caused the loss of the palate, vomer and nasal bones. Then again, in order to digest certain kinds of food, in fact all of the carbo-hydrates, such as starch, sugar, oil, gelatine, gum and flesh, the combined secretions of the follicles and salivary glands are needed and these could not be had where the roof of the mouth was covered. Consequently if we are not able to digest these as nature designed, the injury liable to occur physically and mentally, is incalculable.

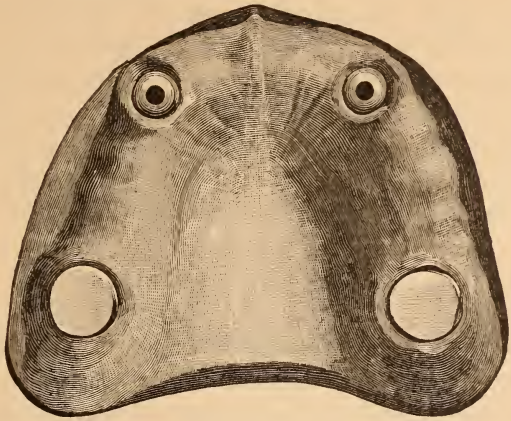
Now, by a careful analysis of the fluids of the mouth, the salivary gland excretion will be found alkaline, and that of the mucous membrane, acid. Who doubts that these numerous follicle glands were for an all-wise purpose? We cannot close our eyes against these facts if we have any regard for humanity at large. We all know that inflamed mucous membrane does not excrete normal secretion, and that nine-tenths of all persons with the roof of the mouth covered have inflamed mucous membrane. The natural conditions of the mouth, and of digestion, are interfered with, and as stated before, the question of how to restore the teeth and not interfere with the natural condition has baffled the skill and ingenuity of the dentists familiar with these facts. Wishing to do their patients no injury, if they can do them no good, they have refused to extract teeth firm in the jaw, and set their wits at work to restore these diseased teeth instead of extracting them, knowing that they could never replace them.

Being familiar with these facts for many years, my efforts have been directed towards preserving the natural teeth and restoring what loss there might be without covering the roof of the mouth. My experience has convinced me that as a rule, a tooth firm in the jaw need not be extracted. There are but few exceptions. When the treatment is followed persistently, and proper judgment used, nearly all the partial loss of the teeth can be restored without covering the roof of the mouth, and made as valuable for masticating food as the natural teeth, I am positive, and with less injury to the remaining teeth, than by any other method. The method referred to is that known as the "Low Method," or bridge work.

Bridge work consists in supplying vacancies between teeth or roots with artificial teeth, attached to the adjoining natural teeth or roots by means of bands or crowns, and held in such position that there is no contact with or pressure on the gums beneath, and thus no opportunity for secretion or other foreign matter to be held there and thereby become offensive.

There is really but one kind of bridge work, and but one way to make bridge work to insure success. There are many ways of making teeth without plate, but this is not bridge work. I will here try to explain in detail my manner of making and adjusting bridge work.

For the first illustration, as seen in cut No. 1, we have a case where all the teeth have been extracted, except the two cuspids and two second molar roots.



No. 1.

We first proceed to prepare the roots by crowning. I use gold crowns on the molar teeth and what is known as the Low Crown on the two cuspids.

The preparation of the two cuspids consists in making the crown ready for adjustment. I always measure the tooth to be crowned with gold, with a strip of block tin, about 35 Stub's gauge. Place the tin around the tooth, and with pliers carefully measure the full size of the same.

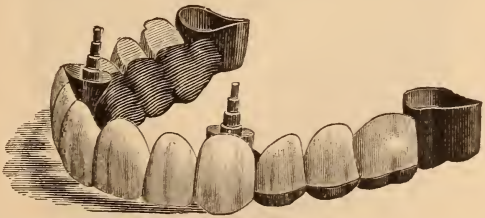
Should you be measuring a tooth, or part of a tooth, on which there are projections, take the engine, and with a stone, grind off the same, making a smooth surface, so there will be nothing to interfere with the proper fitting of the bands. After cutting the tin measures by the marks made by the pliers you have the measures ready to make the gold bands by. Cut the bands and bevel the edges, and solder together and you are ready to fit. After fitting all the bands, and finishing the crowns in the usual way, I place each in position in the mouth, having previously regulated the articulation of each crown as desired, in the process of making. We now take a deep articulation in wax, and impression in plaster paris; remove before it gets too hard, and place all the crowns in their positions in the impression; varnish, oil and pour in the usual way; separate the cast from the impression, and place in the articulator. Then pour plaster. After the plaster has hardened, remove the wax and we have the articulation proper, and are ready to select and grind our teeth, having previously selected our shade. My experience has long ago taught me that no porcelain tooth can stand the pressure for bridge work. The strain on them being twice as great as with teeth on plates, which rest on the gums that give to pressure. In order to prevent breakage of teeth and give strength, I have for many years been making a tooth with gold cusps. I will here describe my manner of doing so. I had some shells of bicuspids and molars made, or rather teeth, without the crown. They can now be found in some of the depots.

For the first step, I use 28 gauge platinum for a covering of the inside of the shell or just where you wish gold to flow. Then I bend the pins down to hold the platinum in position, and with a file, remove all over-lapping platinum to prevent breaking of our tooth in heating. The tooth is made flat on the crown surface with the express intention of restoring with a gold crown. The crown need not be very thick, but should perfectly resemble the cusps on the natural tooth, for the purpose of mastication. As these cusps are not on the market, and every dentist making bridge work cannot make it in a way to stand, without putting gold cusps on the grinding surface of the bicuspids and molars, I will here describe for the benefit of those who do not know how to make them, how they can be made with very little trouble. Pick out a natural tooth with cusps the exact shape you wish to have your gold cusps, mix some fire clay in a thick paste, then press your tooth into it a little deeper than you wish the cusps. Having made the proper impression, remove the tooth, and set the impression over the gas stove to dry. After it is dried and reasonably hot, lay your pieces of gold in the impression and with a blow pipe, melt them. When melted, press with a piece of steel on the gold till cool. This mould will do to make many from. If you have not the fire clay and can get charcoal that is burned from fine grained wood and is soft, you can simply press your tooth into the charcoal and melt in the same way, or you can carve your teeth as you desire in a block of carbon. Of course, the little steel dies are handier, as we can swedge up our gold cusps in them, either solid or thin.

Having described our manner of making the cusps, we will now return to the manner of finishing our tooth. We left off by saying we covered the inside and bent down the pins and filed off the over-lapping platinum. We now place the cusp on the top of the tooth, and place in the position desired, holding it there with wax, and with a spatula trim the wax the exact shape we wish our tooth to be, v-shape, tapering from the crown down. We now encase in plaster and sand, which gives us a box. When hard remove the wax and place over the stove, and when sufficiently dry, fill in with coin gold, using the blow-pipe to melt it in a solid mass, and then our tooth is ready to file up and place in position on the articulator. Cut No. 2 shows the tooth in this condition.

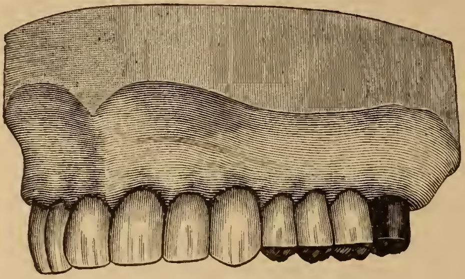
No. 2.

After our teeth are all arranged, we hold the same in position with wax, remove from the articulator, encase with plaster and sand or asbestos in the usual way. That we may have a strong case, I always use platinum wire between each tooth, and then proceed to heat and solder. Be sure that all the gold cusps are so arranged that you can get all soldered together, as this gives us great strength. My formula for solder, which I have used for many years, and which will be found very easy flowing and almost the exact color of the gold you are using, is as follows: Always figure from the carat of gold you are working. Take one dwt. coin gold, 2 grains of copper, and 4 of silver. We now have our case soldered; after filling as desired, commence to finish with felt wheels and pumice stone, after which use rough buff wheels. We are now ready to adjust in the mouth. In cut No. 3 we see the case ready for adjustment.



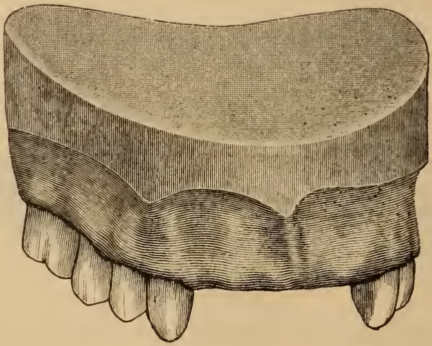
No. 3.

Have the assistant dry all the teeth or roots to be operated upon while you are mixing the cement. Be sure and use a kind which does not harden very rapidly or your cement will set before you get your teeth adjusted. Use sufficient cement to fill all the gold crowns perfectly when the case is driven to place. Moisten the step plugs and cap with cement, touching every portion, and with an instrument place a little cement in the bottom of the cavity. We now adjust our case, using the little rotor for the Low crowns, and a piece of ivory for driving on the gold crowns. Cut No. 4 represents the case when in position.



No. 4.

It will be seen by looking at the previous cut No. 3 that the teeth after having been soldered are all spaced fully one-third of the distance from the place of contact with the gums, and the grinding surface of the teeth, so that secretions could not possibly lodge there. I have given you a description of my manner of making a full upper case of bridge work, where there are roots to be crowned to support the bridge. I will now describe my manner of operating upon a case where the four centrals are missing, as seen in cut No. 5. To supply these four teeth where the cuspids are intact, I use a gold band.

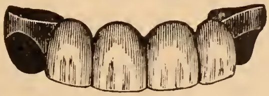


No. 5.

I first measure the tooth with strips of tin, and make the gold bands, as before described, cut out the outside lower portion of the band before beginning to fit. In fitting as the band is being driven down, cut away any of the band that touches the gum before all touches; never drive the band under the gum, as inflammation would probably follow.

I mention this as I have seen many attemps to get rid of the band by driving up under the gums and cutting them out on the front, until they were too narrow for strength. It is hard work to make something out of nothing. The bands should be heavy and strong and the patient made to understand that if he expects to get rid of the annoyance of the plate he must sacrifice his dislike to showing gold. After driving the bands up close to the margin of the gums, as the cuspid teeth are very tapering, the bands will have to be taken in at the bottom. To do this I slit the band about a third of its length up, then place it on the tooth again, lap it over enough to bring it to a close fit, and then take it off and solder.

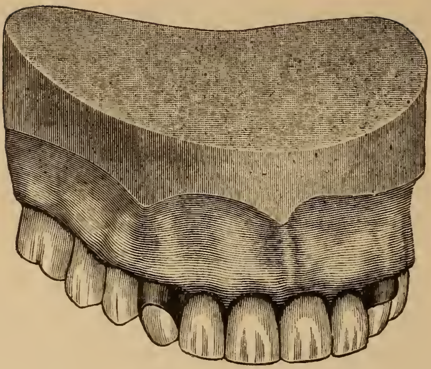
Continue taking it in wherever it does not perfectly fit the tooth, and after a good fit is obtained proceed as before decribed by taking an articulation and impression. In adjusting first try the case on to see that it fits and that the articulation is all right. Cut No. 6 shows the case ready for adjustment.



No. 6.

Next, have the assistant dry the teeth upon which the bands are going, and then mix your cement. This should be mixed to about the consistency of thick cream. It must be neither too thick nor too thin, or the adhesion will not be strong enough to hold. Cover your teeth with cement and then the inside of the bands. Place these on the teeth and carefully mallet up into position. For this purpose I use a steel instrument with a crease or groove in the end. The teeth must be kept dry after the case is in position until the cement is well set. After this is done bevel the edges of the bands and burnish close to the teeth, and if properly done they will be made to resemble gold fillings.

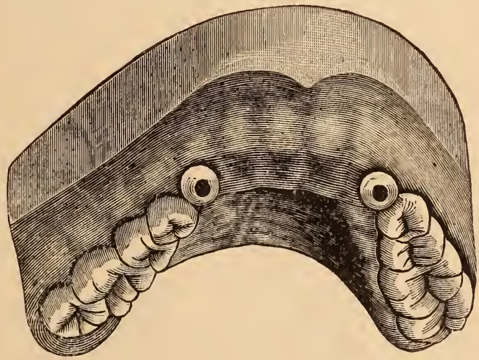
In cut No. 7 we have the case completed.



No. 7.

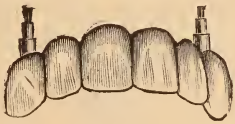
I am aware that in a case like this porcelain crowns instead of gold bands could be used, and I should consider it much preferable to do so where we have roots or unsound teeth to operate upon, but do not advise the destroying of nerves where the teeth are intact to supply such a case with crowns, as the bands will answer every purpose for many years.

If they should give out in after years the roots can then be crowned. I have many of these cases that have been in use seven and eight years, some of which have never loosened, and some I have re-set nearly every year. I always impress upon the patient the necessity of having them re-set immediately, should they become loose, and advise them to have their cases examined at least once a year. Should parties insist upon having crowns used to supply a case like the one just described on perfectly sound teeth, I should begin by using an aluminum disk, with corrundum, cutting deep as possible, both on the labial and lingual sides. Then use the excising forceps. This can be done under the influence of an anæsthetic or otherwise. It is not by any means so painful an operation as one would think. If the nerve does not come out with the piece of tooth cut off, I take a piece of orange wood which I have previously cut the proper shape to drive into the nerve canal. I place it in creosote and let it soak a few minutes before beginning to operate. Immediately after severing the tooth, drive this into the canal, then remove, and dip in creosote and drive in again. This will perfectly fill the nerve canal; all sensitiveness will disappear, and you can begin to operate at once; I do not recommend this treatment for sound teeth, but I have treated many exposed nerves in this way; also many teeth broken by accident, and think this the most satisfactory way to dispose of such cases. I have never had any unfavorable results follow after operating upon teeth in this way, and I can hardly say as much in favor of any other treatment. I speak of this manner of treating exposed nerves as one of the operations that sometimes becomes necessary in adjusting a bridge properly. I do not claim any originality in this mode of treatment. I know several dentists who use this method, all of whom report satisfactory results. We now have cut No. 8 showing the roots prepared to receive the case.



No. 8.

I have many of these cases in use that are giving entire satisfaction. The instrument selected for preparing these roots should be one with small inside cutters and large bevelers, so as not to cut away any more tooth substance than possible.

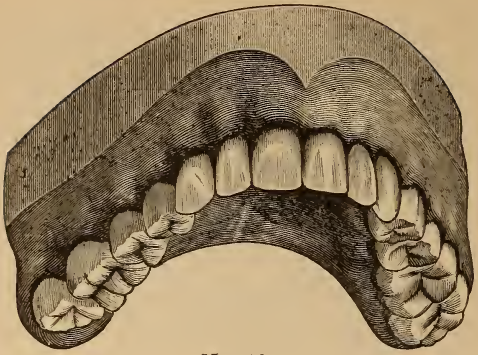


No. 9.

Cut No. 9 represents the case ready for adjustment.

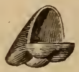
Cut No. 10 represents the case after adjustment.

In this article I have described my manner of making teeth for bridge work. I am now having made a tooth expressly for bridge work, which I hope to be able to place on the market soon. I have been using them, but have not perfected my shells and molds sufficiently to enable me to get them out in large quantities.



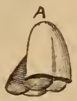
No. 10.

The following cut No. 11 shows us a socket. These I propose to have ready made in various sizes in bicuspids and molars with corresponding shells.

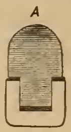


No. 11.

Cuts 12 and 13 represent the shells placed in sockets. Number 12 is a molar tooth showing the shell in position, and 13 is a central reversed.

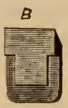


No. 12.



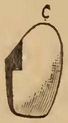
No. 13.

Cut No. 14 represents the socket as made for the four central and two cuspid teeth. The advantage of these teeth can readily be seen not only for bridge work but all gold plates. A tooth, if broken, can readily be replaced without removing the bridge or cracking by soldering, and with only a small expense.



No. 14.

Cut No. 15 represents the shell placed in position in the socket which can be used for bridge or crown work, and will greatly reduce the labor in making either.



No. 15.

Correspondence.

"I charge you that this epistle be read."

NECROSIS OF THE LOWER JAW.

Dr. Geo. Watt, Xenia, O.

Dear Sir:—Apropos to reading of Dr. Martin's article in the Journal for May, on Necrosis of the Lower Jaw, I herewith append a case in practice which may be of interest to the many readers of your valuable Journal.

In the fall of 1884 a young farmer, about 30 years of age, presented himself for an oral examination. He thus addressed us: "Well, doctor, I have had a terrible amount of trouble the last four weeks with my upper front teeth and gums. I want you to look at them and tell me what is wrong. I have been treated by two physicians, but they have done me no good; so I thought I would come to you." (Query:—What did he come to me for? was it *because* I am a dentist? or was it *because* he had lost faith in his physicians? At any rate I was a "Jack (man) in a pinch.")

On examination found all the upper teeth, back to the first molars, very loose,—in fact they could almost have been extracted with the fingers. The gums were turgid, quite spongy, and there was a profuse discharge of slightly fetid pus from around the necks of the teeth. There was a perfect line of demarkation between the second bicuspids and first molars, on both sides. With a slight hope of saving the teeth, which were all good, prescribed the usual remedies, which were used carefully for ten days, but to no purpose. On a second exploration for necrosed bone, found evidence that further treatment, without extracting the teeth, would be useless. After the extraction the usual sequelæ, exfoliation of the sequestra, after which the gums speedily healed. The parts were restored with an artificial denture, and to-day, the gentleman is well and, I trust happy. Like Dr. Martin's patient, there seemed to be no cause for the trouble. He was a hale, robust farmer, of good habits, and when he asked me the *cause* of his disease I replied I would answer his interrogatory by asking him why he existed, the solution of one being about as easy as the other. The above case is quite analagous to Dr. Martin's, especially so in that it seemed to be impossible to discover the etiology of the disease.

W. T. Jackman.

Waynesburgh, O., May 13th, 1886.

Compilations.

"Gather up the Fragments."

WOMEN IN DENTISTRY.

Through the kindness of Miss Susan B. Anthony, we are privileged to place before our readers the following hitherto unpublished matter from the forthcoming volume (III) of the "History of Woman Suffrage," edited by Elizabeth Cady Stanton, Susan B. Anthony and Matilda Joslyn Gage, and which will soon issue from the book publishing house of Charles Mann, of this city:

Miss Lucy B. Hobbs, of New York, was the first woman that ever graduated in the profession of dentistry. She matriculated in the Ohio College of Dental Surgery, Cincinnati, in the fall of 1865—passing through a full course of study, missing but two lectures, and those at the request of the professor of anatomy. She graduated from that institution in February, 1866. A letter from the dean of the college testifies to her worth as follows:

"She was a woman of great energy and perseverance. Studious in her habits, modest and unassuming, she had the respect and kind regard of every member of the class and faculty. As an operator she was not surpassed by her associates. Her opinion was asked and her assistance sought in difficult cases almost daily by her fellow-students. And though the class of which she was a member was one of the largest ever in attendance, it excelled all previous ones in good order and decorum—a condition largely due to the presence of a lady. In the final examination she was second to none."

Having received her diploma, she opened an office in Iowa; from thence she removed to Chicago, and practiced successfully.

The following letter from Mrs. Taylor (formerly Miss Hobbs) gives further interesting details. Writing to Matilda Joslyn Gage, she says:

"I am grateful to you for giving me the opportunity to place in history the fact of my study of dentistry. I was born in Franklin county, New York, in 1833. You ask my reason for entering the profession. It was to be independent. I first studied medicine, but did not like the practice. My preceptor, Professor Cleveland, advised me to try dentistry, and I commenced with Dr. Samuel Wardle, of Cincinnati, finishing my studies in March, 1861. At that time the faculty of the Ohio Dental College would not permit me to attend, and there was not a college in the United States that would admit me, and no amount of persuasion could change their minds. So far as I know, I was the first woman who had ever taken instruction of a private tutor.

I went to Iowa to commence practice, and was so successful that the dentists of the state insisted that I should be allowed to attend the college. Their efforts prevailed, and I graduated from the Ohio Dental College at Cincinnati in the spring of 1866—the first woman in the world to take a diploma from a dental college. I am a New Yorker by birth, but I love my adopted country—the West. To it belongs the credit of making it possible for women to be recognized in the dental profession on equal terms with men. If you should wish any further proof, write to Dr. Watt, who was professor of chemistry at the time I graduated, and I know he will take pleasure in giving you any additional information."

The following in regard to the great struggle in Philadelphia to secure to women their rights in the matter of dental education, is from the vigorous pen of Prof. James Truman, then of the Pennsylvania College of Dental Surgery, now of the Dental Department of the University of Pennsylvania. It is taken in full from the work in question:

"The general agitation of the question: What are women best qualified for in the struggle for existence? naturally led liberal minds to the opening of new avenues for the employment of their talents, shared equally with men. Her right to practice in medicine had been conceded after a long and severe conflict. Even the domain of the theologian had been invaded, but law and dentistry were as yet closed, and in the case of the latter, unthought of as an appropriate avocation for women. The subject, however, seemed so important, presenting a field of labor peculiarly suited to her, that one gentleman, then professor in the Pennsylvania College of Dental Surgery, felt it his duty to call public attention to this promising work. In a valedictory delivered by him to the class of 1866, at Musical Fund Hall of Philadelphia, he included in his theme the peculiar fitness of dentistry for women. The question was briefly stated, but it rather startled the large audience by its novelty, and the effect was no less surprising on the faculty, board of trustees and professional gentlemen on the platform."

In the fall of 1868 the dean of the Pennsylvania College of Dental Surgery was waited upon by a German gentleman, who desired to introduce a lady who had come to this country with the expectation that all colleges were open to women. Although informed that this was not the case, he still entertained the hope that she might be admitted as a student of dentistry. She gave her name as Henriette Hirschfeld, of Berlin. The matter came up before the faculty, and after a free discussion of the whole subject, she was rejected by a majority vote, but two voting in her favor.

In a subsequent interview with Professor Truman, he learned that she had left her native land with the full assurance that she would have no difficulty in "free America" in securing a dental education. She had also the positive sanction of her government, through the then minister of instruction, Dr. Falk, that on condition of receiving an American diploma she would be permitted to practice on her return. Her distress, therefore, at this initial failure was, naturally, very great. The excitement that this application made was intensified when it was rumored among the students that a woman desired to be matriculated. The opposition became very bitter, and manifested itself in many petty annoyances. In the course of a day or two one gentleman of the faculty, and he the dean, concluded to change his vote, and as this decided the question, she was admitted. The opposition of the professor of anatomy, who belonged to the old school of medical teachers, was so manifest that it was deemed advisable to have her take anatomy in the Woman's Medical College for that winter. The first year of this was in every way satisfactory. Although the students received her and Mrs. Truman, who accompanied her on the first visit, with a storm of hisses, they gradually learned not only to treat her with respect, but she became a favorite with all, and while not convinced as to the propriety of women in dentistry, they all agreed that Mrs. Hirschfeld might do as an exception. The last year she was permitted by the irate professor of anatomy, Dr. Forbes, to take that subject under him.

She graduated with honor, and returned to Berlin to practice her profession. This was regarded as an exceptional case, and by no means settled the status of the college in regard to women. The conservative element was exceedingly bitter, and it was very evident that a long time must elapse before another woman could be admitted. The great stir made by Mrs. Hirschfeld's graduation brought several other applications from ladies of Germany, but these were without hesitation denied. Failing to convince his colleagues of the injustice of their action, Dr. Truman tried to secure more favorable results from other colleges, and applied personally to Dr. Gorgas of the Baltimore College of Dental Surgery. The answer was favorable, and he accompanied the applicant and entered her in that institution. This furnished accommodation for a few applicants. The loss in money began to tell on the pockets, if not the consciencies, of the faculty of the Philadelphia school. They saw the stream had flown in another direction, swelling the coffers of another institution, when, without an effort, they could have retained the whole. They concluded to try the experiment again, and accepted three ladies in 1872 and 1873—Miss Annie D. Ramborger of Philadelphia, Fraulein Veleska Wilcke and Dr. Jacoby of Germany. Their first year was very satisfactory, but at its close it was very evident that there was a determination on the part of the minority of the class to spare no effort to effect their removal from the school. A petition was forwarded to the faculty to this effect, and although one was presented by the majority of the students in their favor, the faculty chose to accept the former as representing public sentiment, and it was decided not to allow them to take another year at this college. This outrage was not accomplished without forcible protest from the gentleman previously named, and he appealed from this decision to the governing power, the board of trustees.* To hear this appeal a special meeting was called for March 27, 1873, at which the communication of Professor Truman was read and ordered filed. A similar communication in opposition was received, signed by Professors T. L. Buckingham, E. Wildman, George T. Barker, James Tyson and J. Ewing Mears. The matter was referred to a committee consisting of Hon. Henry C. Cary, W. S. Pierce and G. R. Morehouse, M. D. At a special meeting convened for this purpose, March 31, 1873, this committee made their report. They say:

"Three ladies entered as students of this college at the commencement of the session, 1872-73, paid their matriculation fees, attended the course of lectures, and were informed, by a resolution adopted by a majority of the faculty at the close of the session, that they would not be permitted to attend the second course of lectures. No other cause was assigned for the faculty than that they deemed it against the interest of the college to permit them to do so, on account of the dissatisfaction which it gave to certain male students, etc. * * * The goal to which all medical and dental students look, is graduation and the diploma, which is to be the evidence of their qualification to practice their art. To qualify themselves for this they bestow their time, their money and their labor. To deprive them of this without just cause is to disappoint their hopes, and to receive from them money and bestowal of time and labor without the full equivalent which they had a right to expect."

After discussing at length the legal aspects of the case, the summing up is as follows:

"We, therefore, respectfully report that in our opinion it is the legal right of these ladies to attend, and it is the legal duty of this college to give them, as students, a second course of lectures on the terms of the announcement which forms the basis of the contract with them."

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* As through the influence of Dr. Truman Miss Hirschfeld had first been admitted to the college, he felt in a measure responsible for the fair treatment of her countrywomen who came to the United States to enjoy the same educational advantages. When the discussion in regard to expelling the young woman was pending, Dr. Truman promptly and decidedly told the faculty that if such an act of injustice was permitted he should leave the college also. Much of Dr. Truman's clear-sightedness and determination may be traced to the influence of his noble wife, and no less noble mother-in-law, Mary Ann McClintock, who helped to inaugurate the movement in 1848 in Central New York. She lamented in her declining years that she was able to do so little. But by way of consolation I often suggested that her influence in many directions could never be measured; and here is one: Her influence on Dr. Truman opened the dental college to women, and kept it open while Miss Hirschfeld acquired her profession. With her success in Germany, in the royal family, every child in the palace for generations that escapes a toothache will have reason to bless a noble friend, Mary Ann McClintock, that she helped to plant the seeds of justice to women in the heart of young James Truman. We must also recognize in Dr. Truman's case that he was born and trained in a liberal Quaker family, his own father and mother having been disciples of Elias Hicks.—*Editor History of Woman Suffrage.*

This report was signed by all the committee, and read by W. S. Pierce, one of the number, and judge of the Court of Common Pleas of Philadelphia. It carried with it, therefore, all the force of a judicial decision, and was so accepted by the board, and adopted at once. This left the majority of the faculty no choice but to accept the decision as final as far as these ladies were concerned. This they did, and the three were invited to resume their studies. Two, Misses Ramborger and Wilcke, accepted, Miss Jacoby refused and went to Baltimore.

The most interesting feature of the matter, and that which clearly demonstrated a marked advance in public opinion, was the stir it made in the press. The daily and Sunday papers bristled with strong leaders, the faculty being denounced in no measured terms for their action. To such an extent was this carried, and so overwhelming was the indignation, that it practically settled the question for Philadelphia, and although several years elapsed after the ladies were graduated before others were accepted, when the time did arrive, under the present dean, Dr. C. N. Peirce, they were accorded everything, without any reservation, and the school has continued ever since to accept them. At a meeting of the American Dental Association, held at Saratoga, 1869, Dr. Truman introduced a resolution looking to the recognition of women in the profession. The resolution and the remarks were kindly received, but were, of course, laid on the table. This was expected, the object being to make the thought familiar in every section of the country.

These efforts have borne rich fruit, and now women are being educated at a majority of the prominent dental colleges, and no complaints are heard of coeducation in this department of work. The college that first accepted and then rejected—the Pennsylvania of Philadelphia—has a yearly average of seven to eight women, nearly equally divided between America and Germany. Of the three dental schools in Philadelphia, two accepted women, and the third—the Dental Department of the University of Pennsylvania—would, if the faculty were not overruled by the governing powers.

The learned theories that were promulgated in regard to the injury the practice of dentistry would be to women, have all fallen to the ground. The advocates of women in dentistry were met at the outstart with the health question, and as it had never been tested, the most favorably inclined looked forward with some anxiety to the result. Fifteen years have elapsed since then, and almost every town in Germany is supplied with a woman in this profession. Many are also established in America. They have all the usual requisites of bodily strength, and the writer has yet to learn of a single failure from physical deterioration.

The first lady, Miss Lucy B. Hobbs, to graduate in dentistry, was sent out from the Ohio college, and she, I believe, is still in active practice in Kansas. She graduated in 1866. Mrs. Hirschfeld, before spoken of, returned to Germany and became at once a subject for the fun of the comic papers, and for the more serious work of the *Bojan* and *Uber Land und Meer*, both of them containing elaborate and illustrated notices of her. She had some friends in the higher walks of life; notable amongst these was President Lette of the *Trauen-Verein*, whose aid and powerful influence had assisted her materially in the early stages of her effort. The result of these combined forces soon placed her in possession of a large practice. She was patronized by ladies in the highest circles, including the crown princess. She subsequently married, had two boys to rear and educate, and a large household to supervise. She has assisted several of her relatives into professions, two in medicine and two in dentistry, besides aiding many worthy persons. She has established a clinic for women in Berlin, something very badly needed there. This is in charge of two physicians, one being her husband's sister, Dr. Fanny Tiburtius. She has also started a hospital for women. These are mainly supported by her individual exertions. Notwithstanding all these multifarious and trying duties, she practices daily, and is as well physically and mentally as when she commenced. Dr. Valeska Wilcke of Königsberg has been over twelve years in a very large practice with no evil results; Miss Annie D. Ramborger, an equal time, with an equally large practice, and enjoys apparently far better health than most ladies of thirty.

Dentistry is, probably, one of the most trying professions, very few men being equal to the severe strain, and many are obliged to succumb. No woman has as yet failed, though it would not be at all remarkable if such were the case. The probabilities are that comparatively few will choose it as a profession, but that another door has been opened for employment is a cause for congratulation with all right-thinking minds.—*Odontographic Journal.*

USE OF THE BLOW-PIPE.

DR. L. P. HASKELL, CHICAGO.

However much the student may use an automatic blow-pipe, of any kind, he should become thoroughly familiar with the *mouth* blow-pipe. Unfortunately many never seem to acquire the art of blowing a continuous blast.

The first step is to procure a *proper* blow-pipe. This unfortunately is difficult. I have endeavored to get dental supply manufacturers to furnish such, but as yet without avail; why I do not know. The blow-pipe furnished for dental use, is the same used by jewelers, whose requirements are entirely different, they use much lower grade solders; small articles to solder, and not inserted, as a set of teeth must be, in plaster and sand, or asbestos. The small blast will suffice for them. Dentists require a larger flame, and a stronger, fuller blast.

The dental blow-pipe should be at least 12 inches long, so as not to bring the face too near the heat. The mouth aperture should be at least $\frac{5}{8}$ inches in diameter, and the blast aperture $\frac{1}{16}$ inch.

The mouth-piece should *rest against* the lips, for if taken inside, the effort to close around it tires the muscles. The pipe should be held so as to take in the whole blaze, in *heating up.*

But blowing a continuous blast, involves not only the lips and cheeks, but of equal importance, the diaphram. This must be kept partially distended all the time, for here is the reservoir of supply, and the moment that collapses, one must stop and take a fresh supply of air.

The use of the mouth blow-pipe is very beneficial to the lungs, if used intelligently, and one thoroughly conversant with it cares little for the foot-bellows, or other appliances.

Gas makes the best blaze, if properly used. The gas-pipe should be in two joints, so as to allow of free motion. The end should be cut square, and fine wire gaze, three or more thickness, wound over it, so as to make a bulb; this breaks the force of the gas, so that it resembles the flame of a lamp, and is easily controlled by the blow-pipe.—*Items of Interest.*

Editor's Specials.

"Write the Vision and make it plain."

BADLY MIXED—UNFORTUNATE.

The following we find on page 219 of the *Items of Interest*, for May, 1886. It is an item of interest, and compound interest at that. A little truth, a little error, and a little platitude afford materials for an item, and it may be classed as a compound item:

"White Decay.—Dr. J. W. Clowes says: I used to hear of the denuding process, but no one seemed to know much about it. When I saw the old-time black decay I knew what it meant and how to treat it, but now we have this terrible white decay, and we stand aghast! It is no riddle, but is in great part produced by tonics prescribed by physicians. Excessive use of alkalies acts on the teeth and causes them to melt away. I wish some impression could be made on physicians that would make them desist from their use. Such methods baffle the efforts of dentists to save the teeth. In old times this was not so, and it should not be so now. I utter an earnest protest against giving medicines that destroy the teeth. The excuse for giving such remedies is that it is their duty to save life, even though the teeth are sacrificed. I do not believe in giving medicines that destroy one part to cure another. I have carefully cultivated good teeth only to have them riddled by erosion. But it is not a 'mystery.' The muriate of iron dissolves out the tooth structure, and the brush makes the grooves."

Of course we do not hold Dr. Clowes responsible for such utterances; for we did not hear him make them; and by sad experience we know that average reporters are very uncertain. But the article with all its unsound teaching, is before the public, and will confuse unless contradicted, or rather corrected.

In the first place, the article is named "White Decay," but the first item in the consideration is the "denuding process." But denudation and white decay are less alike than can be well imagined. And it is claimed that white decay "is in great part produced by tonics prescribed by physicians." And the inference we are to take from the reading is that these "tonics" are alkalies, which are used in excess, and melt the teeth. Nothing like white decay here. Again, in spite of his best efforts the teeth are "riddled by erosions." But erosion and white decay are very dissimilar. And at last the mischief is done by muriate of iron and the brush. The muriate, or hydrochlorate of iron, generally called chloride of iron, can act but little on the teeth; but it is often, if not generally administered in the form of a tincture, which has an excess of muriatic, or hydrochloric acid, over and above that necessary to dissolve the iron salt.

Again let us say that it is doubtful about Dr. C. being correctly reported, and therefore it is doubtful if he said the above, imputed to him. But even if it is, word for word, as he uttered it, we are not criticising him. We can criticise an article, and leave the author of it intact; and it is our duty to do it rather than to allow erroneous teachings to mislead. When we go wrong we thank the brother that corrects our teaching.

Above we have referred to the fact that the "denuding process" and white decay are not much alike. The former is somewhat superficial, while white decay is penetrating. It rapidly reaches after the pulp cavity and its contents; and if the exciting agent is chemical, it is one that corrodes all the constituents of dentine. Though it acts on all the tissues of the teeth, its action on the lime salts is more energetic than that on the organic tissues. And this readily explains its penetrating nature. A portion of the lime salts is dissolved first; leaving in the bottom of the cavity a thin layer of gelatinous substance. This, being devitalized, putrefies. Ammonia is a result of putrefaction, and Liebeg and others tell us that, in the presence of free oxygen, ammonia is always oxidized; and if oxidized in the presence of air and water, the reaction runs rapidly up to the highest degree, converting the nitrogen into nitric acid. This nitric acid being just formed, is active, and therefore dissolves another portion of the lime salts, and the reaction above described is repeated. In other words, it goes forward as a continuous process. And this explains the rapid progress of this variety of decay, if the chemico-vital theory is the true one. The penetrating character of this form of decay is used by the advocates of the germ theory, as an argument to sustain their views, but the penetration is more readily explained by the chemico-vital than by the germ theory, for the habits and traits of the micro-organisms have not been studied with the care and attention necessary to give force to this argument.

But if the germ theory is the true one, we have animals or vegetables that feed on all the constituents of dentine, giving preference, however, to the lime salts. And on this theory white decay and the denuding process can not be much alike.

The short article under consideration seems to imply that white decay is a modern suggestion. "The old-time black decay" is spoken of, and as if in contrast, it is added, "but now we have the terrible white decay."

But the terrible white decay is not new. It destroyed an upper bicuspid in the mouth of our mother, previous to 1830, while a cuspid on the opposite side of the alveolar ridge had black decay, which made very slow progress, and the tooth was finally lost by absorption of the socket, several years after the destruction of the other.

Our recollection of these two decayed teeth is very distinct. Our sympathy for a suffering mother, made stronger, perhaps, by the fact that we were the youngest—the family pet—caused us to make careful and close observations. And often we went to the woodlands to get a green hickory limb for her to make a crude creosote to relieve her tooth-ache, and we clearly recollect that the application was always made to the white decay.

In conclusion, it is quite appropriate to call white decay "terrible," both from its rapid progress, and from the fact that it is scarcely worth while to fill the teeth till the tendency is overcome by constitutional treatment.

A NEW EXPERIMENT.

Long ago we advanced the theory that the exciting or immediate cause of white decay is nitric acid. All the phenomena pertaining to it can be produced by nitric acid, and we know of no other chemical agent of which this statement would be true.

Then the presence of nitric acid in the mouth is easily accounted for. But it is not our purpose to argue the matter here and now. Often we have heard the demand that we must find free nitric acid in the buccal fluids before claiming it as an agent in caries. We have all along maintained that. the acid being formed by the oxidation of ammonia, in contact with bases for it to act on, as the lime salts in the teeth, we ought not to expect to find the acid free, but that nitrates were readily found, as we might naturally expect from the activity of the acid. We illustrated our point by an anecdote of a man adopted by the Indians in pioneer days. This man was in camp with the chief and his young grandson, short of food, and at a distance from headquarters. One morning they found a track like that of a buffalo. They followed it, but the old chief was suspicious that the tracks had been made by an enemy for the purpose of decoying them into danger. After a time they found a fresh deposit on the snow, and the chief exultingly said, Shawnee Indian not drop that, and they increased the speed of their pursuit and soon had their reward.

In like manner, when we have found nitrates, we know that nitric acid has been there.

But lately we have tried a new experiment. Since our severe illness our teeth have decayed very rapidly, and are hopelessly diseased. One very large cavity gets full of beefsteak while eating. We decided to make an experimental laboratory of it, and have endured the annoyance of allowing the food to remain for a time in this cavity. We had no trouble of course in finding ammonia. But lately we have borne the filthy, putrefying mass, for longer periods, and on removing it have found decidedly acid reaction. This has been so well marked as to be perceptible to the taste in some cases. But this is not all. By careful inspection, the acid is found to be the nitric.

THE FORCE OF CIRCUMSTANCES.

A YANKEE claimed that he had built a mill, and was successfully running it by "the force of circumstances." Some of his hearers seemed to doubt the statement; but as one of the circumstances may have been gravitation, or heat, his claim is plausible. It is well always to adapt efforts to the circumstances environing them; but in all cases the efforts should be put forth. Unless we try we accomplish nothing; and if matters of importance are left solely to the circumstances, without intelligent will to adapt, evil results invariably follow.

In view of the above self evident thoughts, and others like them, we presume the American Dental Association will not again make the mistake of adjourning without determining the place for its next meeting. The question being left to a few, and these few granted time indefinite to determine, invites electioneering efforts. Each member has a favorite place to suggest, and he is indignant at the ignorant, stupid committee, if the members can not see with his eyes. His place is so much better than all the rest, that he soon becomes convinced that no other place will do at all. A committee under such trials, is apt to become confused, and in the end but few are satisfied, while many are disappointed, and some are even offended; for when a man gives advice, in solid, deep earnestness, he feels that rejecting his advice is a condemnation of himself.

But sometimes, and often, good comes out of evil, as is set forth by Sampson's riddle, which though founded on an event, more or less commonplace, gives utterance to one of the grandest truths of the universe, that "Out of the eater came forth meat," —a statement proved by the history of all times. Hence if the mistake of last year should so call attention to the matter as to result in rejecting all ideas of huckstering, in the selection of a place to meet, great good will result, and meat will again come out of the eater. Let the Society meet solely for the advancement of science and art, and in places of ready access, and it will begin to work out its destiny.

BITING OFF THREADS.

Many ladies use their artificial teeth as substitutes for scissors. And such use of them soon renders repair necessary. When told they should not bite threads with them they are surprised, and sometimes exclaim, Why only a thread! Why Mrs. Blank bites bread crusts with hers. Then they should be taught not to use even their natural teeth for such purposes. But few think that in biting off a thread the entire muscular force of the jaws in use is concentrated into the small space measured by the diameter of a thread. Besides thread after thread is applied to the same place on the teeth, and thus the enamel is soon broken there.

HEMORRHAGIC DIATHESIS.

The following case of fatal hemorrhage following the extraction of a tooth is quite suggestive. Local treatment, as a rule will not answer in such cases. And as a constitutional styptic, if the term is admissible, we have never found anything better than the old fashioned combination of opium and acetate of lead. As to local styptics, it is probable that tannin forms the firmest and least soluble clot of any; but it is not bulky, and hence, on account of extreme thinness the pressure of blood bursts through it. Nothing in the blood can dissolve it, as the tannate of albumen is nearly insoluble. Persulphate of iron forms a very bulky clot, but it is brittle, and therefore sometimes harder to support by pressure than a tannin clot. In our experience, we have found a firmer clot when using the perchloride than we have obtained from the persulphate of iron; but it is soft and bulky, and not very easily supported by pressure. All things considered we like tannin better as a local application than any other styptic; but of course it should be well supported by pressure. And this pressure should be evenly and somewhat elastic. Wooden plugs do not fulfill the indications. But remember not to rely on local treatment alone.

A styptic is a chemical agent that forms with the blood, or some constituent of it, a definite chemical compound not soluble in blood nor in an excess of itself. This definition we gave years ago when a chemical teacher, and as it has been very extensively copied we presume it is very satisfactory. This definition rules out nitrate of silver, sulphate of zinc, etc., which form clots more or less rapidly soluble in blood.

In treating hemorrhage after extraction both patient and surgeon should be calm. Often in the anxiety and confusion incident to such cases the treatment is too much like shooting with shot guns. The various medicinal agents thought of are poured into or on the patient apparently with the hope that some stray shot may hit the game. Let both thought and action be calm, or doing and undoing will follow.

A FATAL CASE OF HEMORRHAGE FOLLOWING TOOTH EXTRACTION.

BY HENRY L. ALBERT, M.R.C.S., L.D.S.ENG., DENTAL SURGEON TO THE WEST LONDON HOSPITAL.

The following fatal case of hemorrhage from tooth extraction occurred in St. George's Hospital, and was published in the *British Journal of Dental Science:*

J. T., æt. 22, was admitted as an in-patient on October 9th, 1885, suffering from chronic synovitis of the right knee, the result of a blow. This progressed very satisfactorily, when he was seized with toothache. On the same day, November 28th, the dental assistant, in the absence of the dental surgeon, removed a carious right lower first molar without difficulty. The hemorrhage ceased a few minutes after the operation, but shortly after re-appeared so profusely that it was deemed advisable to plug the socket. November 30th.—There is still much bleeding; patient pale and anæmic. Cavity plugged with beeswax.

December 1st ordered Ext. Ergot. Liq. mxxx. Aquæ ℥j. To be taken at once, and repeated every three hours. Besides this, oil of turpentine and tincture of the perchloride of iron were administered, the former being applied locally as well, but all failed in checking the bleeding.

December 3rd.—Patient weak; perchloride of iron, matico leaves, the actual cautery, and various preparations were all tried, and found ineffectual. There is a good deal of sloughing of the gums. Blood is welling up freely from the socket. Mr. Dent, one of the Surgeons to the Hospital, was sent for. Under ether an attempt to plug the socket with a piece of wood was made, but failed; the anterior wall of the alveolus was then broken away, and solid perchloride of iron inserted into the socket, a pledget of lint was placed on this, and a cork in the lint; the jaws were then bandaged together. The hemorrhage recurred shortly after the operation. Mr. Dent saw the patient in the evening, and the plug was reapplied. At midnight the house-surgeon removed the cork and applied lint soaked in oil of turpentine. Hypodermic injections of morphia were given at 4.50 and 5.40 p. m.

December 4th. — Early this morning the house-surgeon removed the plug and packed the cavity lightly with cotton wool soaked in Ruspini's styptic. Patient anæmic and sleepy from opium. Pulse full and regular. There has been but little hemorrhage since this morning. In the evening the wound began to ooze, and about 10 p. m. the bleeding again became profuse. At 12 p. m. Messrs. Howard, Bennett and Dent met in consultation, and decided upon resorting to further operative measures. Patient placed under the influence of ether. Mr. Dent then made an incision in the middle line of the lower lip, and carried it forwards and to the right. The soft parts were then cleared from the bone, and the latter divided by a saw-cut passing through the tooth cavity; the canal for the inferior dental artery plugged on each side with wool; the divided ends of the bone were not wired. The flap was replaced and secured with hare-lip pins.

December 5th.—About three hours after the operation considerable hemorrhage took place from the wound. Dressings and hare-lip pins removed, and the wound exposed to the air, and mopped with Ruspini's styptic. The bleeding gradually ceased, and at 10 a. m. the flaps were brought together with strapping. Patient waxy in appearance and cold. Pulse 144, soft and easily compressible. Respiration shallow. Later on the hemorrhage recurred, and patient expired quietly at 8 p. m.

Hemorrhage is a sequela of extraction which none can absolutely prognosticate. There are, however, certain indications which, though neither definite nor constant, may, when present, put the dentist on the *qui vive.* The appearance of the patient is often very striking—having fair hair, thin, transparent skin, with bright blue veins and pink cheeks. The pulse is full and rapid. Chronic synovitis is not a very reliable accompaniment of hæmophilia, though, as in this case, it is sometimes seen. The predisposition to bleed is often hereditary, usually through the mother. In this instance it came through the father, who (this was only found out shortly before he died, as he positively refused to tell anything of his family history till then) had succumbed to an attack of epistaxis. The patient himself had nearly bled to death on two occasions from epistaxis and a cut finger.

The treatment that arrested the hemorrhage for the longest time was the local application of Ruspini's styptic. It stopped the bleeding when everything else had failed in a lad for whom I removed a lower molar root, and who bled, on and off, for eight days and nights afterwards.

I do not know of anything that was omitted in the way of treatment. Styptics too numerous to detail were tried. An attempt to stuff the cavity with plaster of Paris failed. On one occasion the patient was placed before the open window, with his mouth open, hoping the cold air would cause contraction of the capillaries, but with no beneficial result.

Stimulants were administered towards the end. The temperature on Dec. 3rd was 99.6° F., whilst shortly before death registered 102.6° F., steadily rising in the interval.

No post-mortem examination was made.

SEE OURSELVES AS OTHERS SEE US.

In selecting the following article from *The Journal of the British Dental Association* we aim to give our readers a chance to see what our brethren over the waters think of our sayings and doings. It is taken from the *Reviews and Notices of Books*, and hence expresses the opinions of the editor. Notice that while he agrees with the position taken by Dr. Barrett as to earthy phosphates, he regards the argument of Dr. B. as not conclusive. And in pointing out objections to the same, like our Journal, he illustrates by the pale, anæmic girl using large doses of iron or its salts, and gaining red cheeks by so doing.

He speaks of one member being "as hopelessly unintelligible as ever," and again as speaking "intelligently and intelligibly." Like some others, this member is subject to moods. We have seen him when he talked in raptures, while some listened as if being enlightened by inspiration, the facts being that neither speaker nor listener understood a sentence uttered. And again we have seen him when he was talking calmly and clearly, disseminating light and truth in reference to the subjects considered. The experience of the *Journal* has not greatly differed from our own. But read the article carefully, and make your own comments. And if any of our readers wish to criticise the critic, the Ohio Journal will furnish space, provided always that it is done in a proper manner.

"We may at once say that the volume contains several very thoughtful papers, well worthy of careful perusal. We note that there are a few more than two hundred members; and in the formal business transacted we observe that the sections of Anatomy, of Pathology and Therapeutics, and of Physiology, are each authorized to spend the sum of $200, to be expended at their discretion in the encouragement of original investigation. The volume opens with a paper upon the Earthy Phosphates, by Dr. W. J. Barrett, who takes the view that the adminstration of these salts to a mother during pregnancy, or to a child, has been clinically found to be of no use, and that this might have been inferred *a priori*, because the animal frame is not able to assimilate directly things from the inorganic world, but requires the intervention of plants.

The matter is, however, hardly to be so simply disposed of; without regarding it as at all probable that the phosphates adminstered are directly used for the manufacture of teeth or bones, and fully admitting that it is exceedingly improbable that in such cases the organism fails to be able to get all the phosphates required from its ordinary food, in which they abound, yet we think that Dr. Barrett pushes his physiological argument rather far. An anæmic girl gets daily an obvious advantage from the free administration of iron salts, in quantities enormously greater than her necessities for blood-making purposes, though exactly how she gets that advantage we do not know; we do know, however, that she does not get the same advantage from small doses, and so we do not consider Dr. Barrett's argument a convincing one. However, with his conclusion we quite agree.

The next paper is by Dr. Atkinson, who mounts his old hobby-horse of Nomenclature and Terminology, and is as hopelessly unintelligible as ever. It is not for us to endeavor to fathom Dr. Atkinson: in the discussion upon Dr. Barrett's paper he speaks twice, intelligently and intelligibly, and he winds up the discussion, so that it is on the very next page of the Transactions that he relapses into his old ways.

Upon Operative Dentistry there is no paper, but a discussion in which bridge work, the Herbst method of filling, and sundry other points were touched upon: the Herbst method found some warm supporters, but the balance of opinion amongst the speakers seemed against it, whilst we note that matrices are coming into greater favor.

Dr. Frank Abbott contributes a paper upon some pathological conditions of the enamel, which would be hardly intelligible without the figures; he points out that near to the neck of the tooth enamel prisms may be found which are nearly parallel with the surface of the tooth, instead of being perpendicular to it, which fact may have some practical bearing in the preparation of cavities for filling. He finds also that pigmentation is very often associated with a curly condition of the enamel rods, and with the occurrence of interspaces wider than usual.

He states that the pigmentation is in the basis substance of the enamel rods, and that pigmented enamel will often stain in an ammoniacal carmine solution, which healthy enamel will not; and under the term "granulation" of enamel describes the occurrence of dilatations of the interspaces, which he, as an undoubting follower of Heitzmann and Bödecker, believe to be filled with living matter.

Next follows a paper by Dr. L. C. Ingersoll, maintaining the duality of the alveo-dental membrane; as we propose to devote a separate notice to this paper with its argument, with which we do not concur, we will merely mention it here. Dr. Harlan, as Chairman of the Section of Dental Pathology, mentions that actinomycosis in the human subject has been recognized by at least two trembling practitioners, but that their professional brethren failed to discern more than ordinary alveolar abscess.

He recommends the stronger tincture of cannabis indica as being vastly more efficacious as an obtunder of sensitive dentine and of the pulp than any form of cocaine; he finds cannabin less efficacious than the tincture or the extract; and he finds it also very valuable as as an application to the gums prior to the adjustment of a clamp or a ligature.

Resorcin and tereben are spoken of as valuable antiseptics, such activity as eucalyptus oil possesses being perhaps due to the presence in it of the latter.

Pyorrhœa alveolaris is treated of by Dr. Patterson, who holds that it is catarrhal, and that careful search will reveal that its subjects are suffering from catarrh of the nasal or pharyngeal mucous membrane likewise; he speaks of the calcareous deposits rightly as being a result and not the cause of the disease.

Dr. Atkinson sobered down again since page 67, advises thus for its treatment: "When slight recession is present, and little or no discharge perceptible, use elixir vitriol (aromatic sulphuric acid) in the little recesses; where the line of detachment is greater, and accumulations of food, microbes, soft or even hard lime deposits occupy its recesses, use aqua regia (one part to seven of water, but he does not give the sp. gravity of the acid); where the loss is still greater, and the gums dark, swollen and discharging pus, sloughs and bloody serum, then resort to caustic paste (equal parts crystallized carbolic acid and caustic potash, rubbed together without water), being nice and careful about seeing that it touches only the depth of the pocket, and their margins without flowing over on to the membrane, and specially the lining of the cheeks and lips."

In the department of mechanical dentistry, Dr. Spyer advocates the use of a reticulated surface upon vulcanite plates to increase suction; he obtains it by vulcanizing upon a piece of tin foil impressed with the pattern.

For the same purpose, Dr. Ames insists that the edges of a suction plate should always reach up to and slightly displace moveable tissues, *i. e.*, those of the lips and cheeks, and of the palate.

For dies, Babbitt metal (1 part copper, 2 antimony, and 8 of tin) is strongly recommended, as is the addition of an eighth or sixth of tin to the lead for the counter dies.

So far, we have been able to speak with entire approval of nearly all that the volume contains; but it closes with a voluntary paper upon the Past, Present and Future of Dentistry, by Dr. E. Parmly Brown, the insertion of which seems to us to have been a mistake. As there are only two pages and a half of it in which to cover the ground, a certain brevity of expression, which those who had the pleasure of meeting the author when here at the International Medical Congress may remember with possible disfavor, was needed.

Thus we read: "Putting your shoulder to the wheel makes progress. Many shoulders to the wheel make much progress. Let us all resolve that our shoulders shall do their duty." In these sentences we seem to feel a reminder of some school of thought. Is it Ollendorff, or is it Martin Farquhar Tupper? And, indeed, that poetry of thought which underlies it all, almost at times forces itself into rhythmical expression: thus we have—

"The lady of the near future will select with jealous care
The physician who guards from harm her oral case of jewels rare."

Sometimes, too, we find him a little careless of the form, like Browning—

> "'Sunlight,' 'Sunlight,'
> Our cry has been, our cry should ever be,
> And cursed will the dentist be who does without it,
> A sickly plant, a withering stunted tree."

And yet, notwithstanding the beauties of style of which we have endeavored to give some idea, it would seem that this paper was shelved for a whole year. "The Committee on Voluntary Essays reported, recommending that a paper by E. Parmly Brown, which was recommended to the Association at its last Annual Session, but which, from want of time, failed to be read then, be heard at some appropriate time during this session." Now, rolling it forth with that emphasis which we can imagine its author would have given to it, we find that it takes ten minutes to get through, so the Association must have had its time pretty full on that last Annual Session; but we are glad that an "appropriate" time was at last found for it.

But then comes a pathetic paragraph (p. 20), "The special committee appointed to devise means for increasing the attendance at the meetings of the Association reported verbally through the chairman, E. Parmly Brown, that after mature deliberation they were unable to offer any practicable suggestions, and asked to be discharged." Poor Dr. Parmly Brown, he piped to them and they would not dance, and he can offer no suggestion to make them do so. But we can: rigorously refuse to read or publish papers which only serve to call down ridicule upon the Association's Transactions."

ENCOURAGING PROGRESS.

Only a few years ago a man who tried to explain the action of medicines on principles that the human mind could comprehend was sneered at as an ignoramus. A man of years, experience, and careful research sometime ago undertook to explain the *modus operandi* of a certain medicine in accordance with the principles of chemical affinity, at a meeting of the professional brethren, and the older members seemed pleased with the suggestions made. But a good looking pleasant young man kindly told him and the entire meeting that the speaker just seated, had clearly demonstrated the fact that he knew nothing at all about the subject under consideration.

But a change has gradually taken place, and now it is not uncommon to hear the action of medicines explained in accordance with the principles of chemistry, or even better still, in accordance with common sense.

Our good, wide-awake friend, Dr. Atkinson, lately read a paper at the Vermont State Society, on NEW REMEDIES AND METHODS, in which may be found the following: "Our caption, New Remedies and Methods, is justified by the fact that most of our polychrests are carriers of oxygen and that though new in form and mode of holding the oxygen, they are but repetitions of the old remedies, and effect remedial action by giving up oxygen to the needy territory."

A few years ago he would have been unkindly criticised for writing thus, and would have been reminded that medicines act "dynamically." But here the action of medicines is properly ascribed to chemical changes produced; and no medicine can act, and no food can nourish on any other principle. We are much pleased to see a man so influential advocate the truth in this way. But we fear that a part of the language used in the paper may be improperly interpreted, and error be thereby promulgated. For example, we find this: "Oil of cloves with oxygen added is now called 'eugenol,' turpentine oil with oxygen added is now called 'sanitas.' Water with oxygen added is now called 'peroxide of hydrogen.'"

Now, is not the above rather indefinite? Is it not likely that the good doctor means oil of cloves with oxygen combined with it, etc.? Oxygen *added* and oxygen *combined* with, may be quite different. All the water in our rivers, ponds, etc., is "water with oxygen added," yet it is not called peroxide of hydrogen.

It is highly important to think clearly and to express the thoughts distinctly, so that no one can be at a loss as to whether a chemical combination or a mechanical mixture is meant.

To illustrate the important difference between mechanical mixture and chemical combination lime and water answers a good purpose. Nine parts of water can be added to twenty-eight parts of lime, causing no apparent change as to dryness. The lime falls to powder, if not previously reduced to that state, but it is to all appearances a dry powder. And this is because the lime and the water combine by the force of chemical affinity. But when any more water is added, the lime is moistened, for no further combination can take place, and we have then a mechanical mixture. Yet in both cases it is *lime with water added.*

Idoform is another good illustration. If we add three parts of carbon (calcined charcoal) to one hundred and twenty-six parts of iodine, and rub them well together, we have simply iodine a little diluted with an inert substance, and the mixture, (for only such it is) is still an active irritant, as any one can demonstrate by applying it to an abraded surface. But when three parts of carbon are *combined* with one hundred and twenty-six of iodine, a practically new substance is formed which is known as iodoform, and instead of being an irritant as before, it is found to be a local anæsthetic. Nothing can be much less like iodine than it is.

This paper is not intended as a criticism, but is intended to coax our influential friends to be careful in the use of language.

PEROXIDE OF HYDROGEN, AGAIN.

"Why do you tell that child the same thing twenty times?" said the annoyed father of the dull pupil. "Because nineteen times have not proved successful," said the patient, persevering wife and mother.

Many of our very good dentists are not familiar with chemical science, and none of us know very much in that direction. Hence it is not strange that there is some confusion of thought in reference to the action of chemical agents when used as medicines. Only persevering patience will clear up the confusion, hence no apology is needed for another paragraph on the subject of peroxide of hydrogen.

At a meeting of the Vermont State Dental Society a prominent member of our profession speaks of the peroxide being an antiseptic, "though more of a mechanical one." And another, quite as well known, and both highly esteemed by the writer, says, "As to how peroxide of hydrogen acts, it acts simply as a broom sweeping out the cavity, and where it has less resistance it will sputter out." But if these positions are true its medicinal virtue is due solely to its physical properties, hence any liquid having the same specific gravity, etc., will accomplish the same results, but nobody believes this. As if not quite content with his broom theory, the latter speaker adds, "This $H_2 O_2$ holds oxygen in a loose grip, and is in a different molecular form than that of water." Most certainly, and it gives up half its oxygen, in an active state, to act according to its nature, and it burns up—doesn't sweep out. If it were to act mechanically, or in accordance with its physical properties, it would be only of the value of atmospheric air, quantity for quantity. As the second equivalent of oxygen is separated from the peroxide by virtue of its affinity for matter in contact, of course it combines as fast as separated. Were it to separate spontaneously in a cavity not large enough to contain it, it might "sputter out" as described. But the decomposition and recombination being simultaneous, the whole process would be quiet, and without agitation, were it not for the fact that carbonic acid gas is formed by the action of the oxygen on carbonaceous matter, and it is this gas escaping that causes the effervescence observed.

The same speaker tells that "Chemists said that there was an excess of oxygen in the water and that the gills of the fishes take it." But the oxygen in the water is passive, and is simply held in solution, and is in no sense in combination with the water. The fishes could not breath without serious results, the oxygen as it escapes from peroxide of hydrogen, for it is then ozone.

The peroxide is soon to become better understood than it is at present; for it has come to stay.

WOMEN IN DENTISTRY.

The article in the Compilations of the present number, on the above subject, speaks for itself. We feel like adding a little light. Probably about 1859 or 1860, while quietly practicing dentistry in Xenia, Ohio, we received a letter from our friend and professional father Dr. Charles Bonsall, of Cincinnati, requesting us to receive Miss Lucy B. Hobbs as a student. For reasons beyond our control we had to regretfully decline.

When Dean of the Ohio College of Dental Surgery we made application, at a faculty meeting to have Miss Hobbs and a gentleman, a native of Liberia, admitted as students. By a vote of four against two, a resolution passed that neither women nor men of African descent would be received.

At the meeting of the American Dental Association, at Chicago, in 1865, Miss Hobbs was present as a member of the Iowa State Dental Society, and we reported to her that not one who had voted against her was a member of the faculty, and that the present authorities would receive her. She asked if we *knew* that, or only hoped it was true. A majority of the faculty was at the meeting and we got together and formally voted to receive her if she should renew her application. As a practitioner of years she was examined and admitted to the senior class, and hence graduated at the close of the session of 1865–1866. The article as we found it states that she matriculated in 1864, but that year we were in the army at the time the Association met. We are free to make the correction and add a few remarks, inasmuch as Dr. Hobbs, or rather Dr. Taylor, now, has referred the writers of the article under consideration to us, as able to give additional information.

We are much delighted to hear of her success in practice. She is a credit to the profession of her choice, and an honor to her *Alma Mater*. A better combination of modesty, perseverance and pluck is seldom, if ever seen.

OF COURSE.

On page 240 of the May number of the *Dental Record* we find the following:

"In the course of the recent Bartlett trial, Mr. T. Roberts, dental surgeon, was giving evidence as to the late Mr. Bartlett's teeth, when the Judge asked him—'Did you use any solution on his gums?' 'A solution of cocaine, which is a drug lately used to promote local anæsthesia.' 'Is it a vegetable or mineral drug?' 'I don't know.' The Judge—'It is an active principle of the cocoanut is it not?' 'I really can not say.' (The *Dental Record* had not been read.—Ed.)"

"The active principle of the cocoanut" is pretty good for a Judge. This is probably the same court that decided that pine apples grow on pine trees, and that crab apples are the fruit of the fresh water lobster, and that watermelons are cultivated in water, and that gooseberries are hatched by geese, and that dogs grow on dogwood trees, which accounts for their bark. It is quite convenient when a court can draw its own inferences, without borrowing a corkscrew.

TO CORRESPONDENTS.

COMMUNICATIONS have been received from a number of our readers, which, owing to sickness and other causes, have not yet received our attention. We hope to be able to reply to all during this month or in the next number of the JOURNAL.

DR. J. M. BROWN DEAD.

DR. J. M. BROWN, an old citizen of Cincinnati, died on the 27th inst., in his seventy-fourth year, at his residence in Newport, Ky.

The Doctor opened the first dental depot west of the Allegheny Mountains, about forty years ago, engaging at the same time in the drug business in the corner store of the Melodeon Building, Fourth and Walnut streets, being advised at that time not to go into business at that corner, owing to its being too far west.

The Doctor continued in business in the same place for thirty years, and during that time was in the banking business as a member of the firm of Fallis, Brown & Co.; also a member of the firm of Adams, Peckover & Co., foundrymen for the manufacture of stoves, engaging also in various other enterprises. The Doctor before his arrival in Cincinnati, was engaged in the practice of medicine.

Dr. Brown was an enterprising and public-spirited citizen, possessed in a remarkable degree a sympathetic and warm-hearted nature, genial and sociable towards every one he met. He leaves an estimable wife, who mourns his loss.—*Cin. Com. Gaz.*

SCALE FOR AMALGAMS.—Those who prefer to use exact proportions of alloy and mercury in amalgams, will find very useful the little nickel-plated prescription scales, without weights, having a graduated scale from ½ to 20 grains. They are sold by druggists and dealers in dental goods.

Societies.

"Wherewith one may edify another."

MEETINGS.

Kentucky State Dental Society, Louisville, Tuesday, June 1, 1886.

Indiana State Dental Association, Indianapolis, Tuesday, June 29, 1886.

Southern Dental Association, Nashville, Tenn., Tuesday, July 27, (instead of May 25), 1886.

American Dental Association, Niagara Falls, Tuesday, Aug. 3, 1886.

National Association of Dental Faculties, Wednesday, Aug. 4, 1886.

INDIANA STATE DENTAL ASSOCIATION.

The twenty-eighth annual meeting will be held in Indianapolis, commencing Tuesday, June 29th, 1886, and continuing three days. All members of the profession are cordially invited to attend.

The State Board of Examiners will also meet at the same time and place.

R. W. Van Valzah, *Sec'y*,
Terre Haute, Ind.

ILLINOIS STATE DENTAL SOCIETY.

The following are the officers elected at the meeting held at Rock Island, May 11 to 14, 1886:

President, W. T. Magill, Rock Island; *Vice President*, C. B. Rohland, Alton; *Secretary*, J. W. Wassall, Chicago; *Assistant Secretary*, Louis Ottofy, Chicago; *Treasurer*, T. W. Prichett, Whitehall; *Librarian*, W. B. Ames, Chicago.

The next meeting will be held at Jacksonville, the second Tuesday in May, 1887.

J. W. Wassall, *Secretary.*

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

THE third annual meeting will be held at Niagara Falls, Wednesday, August 4, at 3 P. M.

H. A. SMITH, *Secretary*, C. N. PEIRCE, *President*.
Cincinnati, O.

INDIANA BOARD OF EXAMINERS.

THE State Board of Dental Examiners of Indiana will meet at Indianapolis, June 29th, 1886.

M. H. CHAPPELL, *Sec. & Treas.*

Books and Pamphlets.

PRESIDENTIAL ADDRESS—By GEO. J. FRIEDERICHS, M.D., D.D.S. To the Louisiana State Dental Society, March 4th, 1886.

QUIZ QUESTIONS:—Course on Dental Pathology and Therapeutics, Philadelphia Dental College, J. FOSTER FLAGG, D.D.S. answered by WM. C. FOULKS, D.D.S. Third edition revised and enlarged. Philadelphia: The S. S. White Dental Mfg. Co. Cloth, 129 pages.

A SERIES OF QUESTIONS pertaining to the CURRICULUM of the DENTAL STUDENT—Embracing Dental Histology, Pathology, Surgery, Prosthesis, Materia Medica and Therapeutics, and general Anatomy, Physiology, Chemistry and Metallurgy. By Prof. F. J. S. GORGAS, M.D., D.D.S., of the University of Maryland. Cloth $1.50; 133 pages. Baltimore: Wm. Boyle & Son, 1885.

A very complete series of leading questions in each department of dental science and cannot but prove an efficient aid to the dental student who wishes to systematize his study.

AN ESSAY ON VULCANIZING RUBBER—By F. W. SEABURY, Providence, R. I.

Our Aftermath.

HODGE'S PESSARY IN FRACTURES OF THE LOWER JAW.—Dr. W. J. Naismith (*Lancet*) describes a fracture of the lower jaw at the symphysis, with a transverse wound two inches in length over the mental protuberance. The fragments of the jaw were freely movable, and it was desirable to apply an apparatus which would fix the bone in place immovably, and at the same time allow the wound to be dressed. Accordingly a Hodge pessary was brought into use, by bending it so as to allow the chin to protrude through the ellipse. One bar was molded so as to support the fracture anteriorly, the other steadied it from below, while the rounded ends afforded admirable lateral pressure on each side, at a point in front of the angles of the jaw. To the rounded end of the pessary tapes were sewn, two on each side, over the padding, and secured over the head, or to a fillet, and around the neck by small buckles. For fractures of the maxilla at or near the symphysis, with or without wound, the Hodge's pessary seems well adapted. It can be bent to fit any size of jaw, and in the qualities of comfort, lightness and coolness, compares very favorably with the solid cumbrous appliances included under the head of molds.—*Maryland Med. Journal.*

LATE HEREDITARY SYPHILIS.—Under this name are included the manifestations of the so-called tertiary period of syphilis which make their appearance at a considerable period after birth, usually about puberty, without any prior symptoms of the disease. Zeissl has collected the records of over a hundred such cases and adds a number seen by himself. The disease affects chiefly the osseous tissues, more especially the bones of the nose, and also the nervous structures and the organs of special sense. The author asserts that Hutchinson's triad (deformity of the permanent incisor teeth, parenchymatous keratitis, and diseases of the auditory apparatus) points only to a probability of the existence of hereditary syphilis; these symptoms may be present without syphilis, and may be absent when the disease is actually present.—*Centralblatt für klinische Medicin.—Med. Record.*

RELIEF OF GANGRENOUS BREATH BY MEANS OF AN INHALER.—At the Charity Hospital, New York, a case of phthisis, with gangrenous breath, was given an ordinary inhaler on which was placed a few drops of carbolic acid. Within a short time the breath ceased to be offensive, and much relief to the irritant cough was experienced. The inhaler here referred to was made of tin and covered. It was made to include both mouth and nose.—*Med. & Surg. Rep.*

BILLROTH'S VIEWS ON ANTISEPTICS.—This eminent pathologist writes the following on antiseptics:

1. Iodoform is the safest and most effective of all manageable antiseptics.

2. Moss, wood-turf, mould, and oakum are useful when there are discharges from the wound.

3. Corrosive sublimate in dilute solution is practically inert as an antiseptic to wounds and renders the patient and surgeon alike liable to mercurial poisoning.

4. Carbolic acid, which is known to be dangerous in strong solutions, is, in very weak ones, as good for wound irrigation as clean water, but probably no better.

NOTES FROM A PHYSICIAN'S SCRAP-BOOK.

BY T. C. M., IN CIN. LANCET & CLINIC.

Chloroform was first discovered by Samuel Guthrie, of Sackett's Harbor, New York, in 1831. Soubeiran, in France, and Liebig, in Germany, made their experiments at a little later period. The American claim to priority is generally admitted throughout Europe.

The Gastric Juice.—Dr. William Beaumont of the U. S. Army, was the physician to whom medicine owes its earliest perfect knowledge of the gastric juice. The subject of his experimentation was Alexis St. Martin, a French Canadian, who was wounded in the stomach in 1822. The first edition of Beaumont's work, "The Physiology of Digestion with Experiments on Gastric Juice," was published in 1833.

Facial Neuralgia.—Areteus seems to have been the first ancient writer who described facial neuralgia. Hippocrates is said to have known of the existence of a pain in the hip extending to the thigh and leg, probably sciatica, but his description is very vague and unsatisfactory. Facial and intercostal neuralgia are not mentioned in the Hippocratic collection.

Excisions of the Jaws.—Dr. Deadrick, of Tennessee, was the first surgeon to perform excision of the lower jaw, in 1810, (See *American Medical Recorder*, Vol. VI., p. 516.)

The first real extirpation of the upper jaw was performed by Dr. Horatio S. Jameson of Baltimore. (See *American Medical Recorder*, Vol. VI., p. 222.) This capital operation occurred in 1820.

From the French.—"*Il est menteur comme un arracheur de dents.*" He is as great a liar as a dentist—meaning, he has infinite conceit in his own professional skill.

Gastrotomy.—Dr. John Bard, of New York, performed the first gastrotomy operation in the United States in 1759.

Dr. Loomis on Bacteria.—The great question at present to be settled is, says Dr. Loomis in his recent lecture on bacteriology, whether we are about discovering the ultimate cause of many hitherto obscure pathological states, or whether these microbes are only bacteria of health taking advantage of diminished vitality to develop with increased rapidity—*whether they are the cause, or the scavengers, of disease.—Columbus Medical Journal.*

FROM THE NEWSPAPERS.

Early Dentistry.—Dr. Monsey extracted teeth by fastening a strong piece of catgut securely to the tooth, to the opposite end of which he affixed a bullet. With this bullet and a full measure of powder, a pistol was charged, and when the trigger was pulled the operation was performed effectually and speedily. Once a gentleman who had agreed to try the novelty, and had even allowed the apparatus to be adjusted, at the last moment exclaimed, "Stop, stop, I've changed my mind!" "But I haven't and you're a fool and a coward for your pains," answered the doctor, pulling the trigger. In another instant the tooth was extracted, much to the timid patient's delight and astonishment.

A Lucid Explanation.—The *Lancet* has been instancing a curious case, in which an old American lady, who had had one of her feet amputated, continued to suffer badly from corns on the foot she had lost. The *Lancet* explains that such facts, though marvellous to the superficial observer, are "easily explained on physiological grounds, for the irritation of the sensory fibres of a divided nerve is referred to the terminal distribution of those fibres." When the thing is put in this simple form, remarks Mr. Labouchere in *Truth*, one sees it in a moment.

"The Eighth Wonder of the World."—The following is taken from a "dodger" being distributed in Pennsylvania towns: "Dr. W. H. F—, who will accomplish the most wonderful feats in dental surgery ever achieved by man. Teeth will be extracted in the twinkling of an eye, without pain, without forceps, swords, whips and also without instruments of any kind. He is truly named "The Eighth wonder of the World." "Free shows begin daily, 3 and 8 p. m."

The Dead Languages.—"Did I understand you to say that Mr. Fungus conversed altogether in the dead languages?"

"I said I had inferred as much."

"From what, pray?"

"From his breath."—*Yonkers Gazette.*

Can This Be True?—There is a man named Smith living in one of the small towns in Michigan who claims to be a dentist. A sign over his door, painted by himself, reads: "Teeth Extracted Without Enny Pane, Laffin Gas Ten (10) cents a Ha Ha!"

Love and Toothache.—If you put two young men in the same bed-room, one of whom has the toothache, and the other is in love, you will find that the person who has the toothache will go to sleep first.

OHIO STATE JOURNAL

OF

DENTAL SCIENCE.

VOL. VI. JULY 1, 1886. No. 7.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

NORTHERN OHIO DENTAL ASSOCIATION.

TRANSACTIONS.

[Reported for the JOURNAL, by L. P. BETHEL, D.D.S.]

THE 27th annual meeting was held on Tuesday and Wednesday, May 11 and 12, 1886, in Cogswell & Co.'s dental depot, Cleveland, Ohio.

FIRST DAY—MORNING SESSION.

The meeting was called to order at 10:45 A. M., by President David Gibbons.

Dr. J. E. Bell was elected Secretary *pro tem.* to act until the regular Secretary, Dr. Wilson, should arrive. The minutes of the previous meeting were read and approved. Dr. Charles Buffett read the Treasurer's report which was approved.

The first topic on the program, "Diagnosis," was then taken up and generally discussed.

DR. BUFFETT said:—To know is the foundation of all medical practice. We should not only understand the anatomy of the thing itself, but of the corresponding parts that may become affected, although somewhat remote. Besides anatomy we should understand physiology; for without this, we cannot fully understand pathology. Pathology is in its infancy; and that which causes it is not yet fully understood; but this is the foundation on which we build our diagnosis. The dentist deals with the mouth; and he is called upon to diagnose manifestations of pain connected with the teeth, namely, neuralgia. Here the dentist is expert,—far above the average medical practitioners. In diagnosing, we must determine whether the lesion has its origin in the pulp, root canal, or exostosed root. It is sometimes difficult to diagnose correctly, as the symptoms are similar, and often obscure. The ordinary cases are comparatively easy; but we often become lost where there is but a slight irritation, or a chronic case of a low type. Disease of bones, caries and necrosis, the dentist is called upon to diagnose. Caries is the death of bone, particle by by particle, while necrosis is death of bone a considerable portion at a time. Both from abscess, and we get an exudation of pus. In necrosis the bone is not sensitive to the touch.

Then we have the diseases of ostitis and periostitis to diagnose; also pathological conditions of the antrum of Highmore. Sometimes we have a tumor to deal with. Then we must ascertain whether it be fluid or solid. With one we get pus; with the other none. If solid, is it malignant or non-malignant? One is of rapid and the other of a slow growth. There are also ulcerations of the mouth and tongue to diagnose, are they simple, or malignant?

Lastly, injuries to the face, as fractures of the lower jaw, are presented to us; and we should be able to diagnose correctly.

Dr. Gibbons, of Warren, O., said:—This is one of the most important parts of the dental profession, and should be first in the minds of all.

Dr. J. W. Lyder, of Akron, O., cited some cases of tumors that had been presented to him. The first was that of a lady. The tumor appeared to be of light character, but upon thorough examination I found it to be of malignant growth, and would not operate upon it. The patient died a few weeks after that time. For eleven years she had been an opium eater and did not suffer much from the disease; but the inflammation and absorption had been so great that the greater portion of the maxillary bone was gone. I have had cases of tumors caused by filling of ducts.

They are troublesome affairs, but can be successfully operated upon and cured, if you can diagnose correctly. An immediate operation on epithelioma is best. The tumor appears like a grain of corn. Have had a number of these; some small and others quite large. The largest was about the size of a wild turkey's egg. In operating on this case, I removed the soft tissues and taking the bone forceps, cut deep. In the portion removed, you could see the little threads in the bone tissue. This was eight years ago, and there has been no return of the growth. In such cases go deep and be thorough.

FIRST DAY—AFTERNOON SESSION.

After the usual preliminaries the subject of "Diagnosis" was again taken up and discussed.

Dr. Butler, of Cleveland, O., said this is the starting point that all professional men must recognize. In the presentation of some cases, for our attention, we are called upon to exercise all the skill or tact we possess, to fathom the difficulties. Never be influenced to go entirely by the patient's suggestions, unless by careful diagnosis you see they are in the right. For instance, patients come to your office, and demand the extraction of a tooth, when it can be treated and saved.

To-day the demand upon us is different from what it was a few years ago. There is a growing demand for the better preparation of men coming into the profession, and no excuse for them otherwise.

Let us take up one little item, which dentists are as negligent in as any other feature in practice, viz:—The examination of a case, and the giving of advice. We should remember it is not simply for to-day, or this year, but for years to come. Take a young patient whose teeth are in malposition, and treat the case superficially, so as to get it off your hands to-day, is a poor exhibition of professional skill, or advice. Two or three such cases have come under my observation within the past few days. The great mass that come to us need such as is for their best interests for years to come. Take this into account, and try to make as few mistakes in that direction as possible.

Dr. F. S. Whitslar, Youngstown, O., said, nothing stands alone. Everything stands related to some other thing. Space cannot destroy the relation between the earth, planet and sky.

It is the same in the human body, in health, as ease, and a want of it, disease. It is the aggregation of symptoms that determine diseases. No effect is the result of a single cause, but several causes, may enter into the producing of a result. Symptoms are understood to be characteristic of functional, or vital trouble, or phenomenal. That which fifty years ago we called signs, had reference to the physiological, rather than the functional.

We now have symptoms of a symptom, for instance, extreme debility, as seen in dysentery, causing frequent evacuations, is a symptom of a symptom.

A knowledge of anatomy and physiology is apparent to every one, in order to diagnose correctly; but this is not all. In order to be a good diagnostician, a man must be born one. Even with the best book learning, our minds are often in the dark.

Here he cited some cases that were difficult to diagnose.

The first was that of a young man who came to have a first superior left molar extracted. The tooth was sore, but an examination revealed no caries or disease. The patient said the tooth had never been jarred in any way, and it did not appear dead. It had been troubling him for some time, but there was no appearance of abscess. I found opposite the dividing line of the bicuspid, on the lingual side, an enlargement, and thought perhaps, tartar was the cause of the trouble, but the removal of this did not arrest it, and I finally extracted the tooth and found, underneath the crown, between the roots, a well developed cyst.

The second case was that of a child, well developed, of healthy parents, who had healthy grand-parents. When the first tooth appeared, the mother became alarmed at an eruption on the child's face. Some of the blotches were small, and others as large as a silver quarter. They called a physician who stated it was simply a tooth rash. The blotches seemingly disappeared when a tooth was erupted, and stayed away until the next tooth appeared.

There was a similar case came under my observation, but the blotches not only appeared on the face, but on the wrists; the other portions of the body being entirely free from them. Now whether it was caused by the erupting teeth, indigestion, or what, I do not profess to know, and would like to hear from others in regard to it.

Dr. Buffett, of Cleveland, said it is a well known fact that during the eruption of the temporary teeth, there is a tendency to skin troubles. The eruption of the teeth does not make the disease, but lets down the bars, and the disease passes in. I am satisfied that three-fourths of the skin troubles are due to some hereditary disease. In this case it is impossible to tell just what the cause was, unless we can get satisfaction from the parents, as to whether the mother was nursing another child at the same time or not.

Dr. Butler, of Cleveland, said he had never seen a case just like this one, but had seen one that had an eczemic condition of the head and wrists, that was worse during the eruption of teeth.

Dr. Brown inquired if a scar remained after the healing of the sores.

Dr. Whitslar said none at all.

Dr. Barnes, of Cleveland, cited a case of a man who came to have a tooth examined last February. The trouble seemed from the left superior bicuspid. A large amalgam filling was removed, but, he said, I found no sensitiveness in the tooth, yet it did not have the appearance of being dead. I filled the cavity with gutta percha, and awaited the results. A few days after this, the patient returned, and said that he had a discharge of mucus from the left nostril. That the patient had consulted a physician, who said it was due to the breaking of the sheath of the nerve, at the foramen. I was satisfied there was antrum trouble, and extracted the tooth, on which I found a large abscess, that had been within the antrum; and the pulp cavity of the tooth was filled with a calcareous deposit. I treated the antrum with peroxide of hydrogen, etc., with successful results.

Another case was that of a man. The gum was blue black, and the discharge of pus, through the nostrils, copious. A physician had been treating him for catarrh. I advised extraction and took out the tooth, and found pus in the antrum. Am still treating the case, and the patient is getting better.

Dr. Siddall, of Oberlin, O., spoke of a case of a lady that was presented to him. Her physician had been treating her for catarrh, without success. He made a thorough examination, and opened into the antrum, from which he extracted a large three rooted molar, with complete relief. The lady had worn full upper and under sets for years.

Dr. W. P. Horton, of Cleveland, said, It is difficult to teach others just how to diagnose. The difficulty comes from a multiplicity of causes. We must first learn what it is to be healthy, and at ease before we can understand disease. The best knowledge does not always come from book learning. Look through all the authors and you find a variety of opinions.

In regard to the eruption Dr. Whitslar spoke of, no doubt it was necessary to force more blood to parts about the tooth, for eruption, which caused a withdrawal, from other parts, of the life giving principles; and the disease appeared. He said a few years ago, when nutrition was not good, blotches appeared on his own hands, but were disappearing now that his health was better.

He then cited a case where a lady's face had become partially paralyzed on one side. The physicians said it was due to amalgam fillings in her teeth, and treated her for mercurial poisoning. The fillings proved, however, to be Robinson's fibrous foil; and an autopsy revealed a tumor, at the base of the brain. that had been entirely overlooked.

Dr. David Gibbons, of Warren, said that he had traced the genealogy of both sides of his family as far back as he could, and found no taint of hereditary disease, yet when his daughter was small, an eruption came out upon her head, about the time the temporary teeth made their appearance, and spread until it extended over the entire head. It became so bad he was much afraid her hair would never amount to much, but now that the child, or nearer young lady, about 13 or 14 years, has erupted all her teeth but the third molars, the trouble has disappeared, and she has a luxuriant growth of hair.

Dr. Charles Buffett said there is much mistaken diagnosis. It is well not to have a hobby; for we should look over the whole ground before we decide.

Dr. W. P. Horton, Cleveland, cited a case of mistaken diagnosis, where the outer cusp of a second bicuspid irritated the cheek, and the physician had called it cancer. The grinding down of the cusp, however, cured the disease.

Dr. L. P. Bethel, Kent, O., said: In this connection it may not be out of place to present a case that came under my observation a short time since. A young lady came to my office and stated that her face was somewhat swollen, and a physician told her she had the mumps. Being a teacher, and having been exposed to that disease, she thought it possible, yet desired to have her teeth thoroughly examined, to see if the trouble could arise from any of them. Upon examination I found the face swollen under the jaw, and immediately back of the ramus of the inferior maxillary. Within the mouth I found a lower third molar partially erupted, and the tissues about it swollen. After questioning her in regard to the trouble, I became satisfied that the tooth was the cause of at least a portion of it. Lanced the gum over the tooth, and dismissed the patient. The trouble disappeared without further treatment, and showed conclusively that the physician had made a hasty diagnosis.

Dr. Fred. Lyder, Akron, O., said one must have a thorough knowledge before he can get a correct diagnosis; and as the advantages are now so great, I think Young America is the coming man.

Dr. Butler, Cleveland, said, the young must necessarily come in to take the places of the older practitioners. As years go by, they will find the demand for knowledge is greater and greater. There are cases presented to-day which tax our skill to the utmost. Even our best men, as Dr. Taft, Dr. Atkinson, etc., have been brought to that point where they would give anything for a world of knowledge greater than they have. The young men can get this knowledge by hard, earnest effort, but in no other way. The young practitioner who struggles for patronage, will get it if he perseveres. There is room for all; the only thing is the want of ability to meet the demands. We have all got to work with our heads and hands; and whether we do good or ill, we must be responsible as individuals.

Subject passed.

FIRST DAY—EVENING SESSION.

The meeting was called to order according to adjournment. The subject, "Different Materials, for, and the Methods of Filling Teeth," was taken up, and Dr. Siddall, of Oberlin, read an essay on "Children's Teeth," which in substance was as follows:

"There is no knowledge that a dentist can impart, that is more needed than a better general understanding of a few simple facts regarding children's teeth. Not only parents, but every person of adult age, teachers, guardians and employers of children, should think and act in a sort of general way for the child.

If we knew a little more than we now know; and if we stopped to consider, we would be far more helpful to the young than we are. If we, as a society, or as individuals, could, in some way, get before the public mind, in the fewest possible words, and without technical terms, enough of anatomy, physiology and hygiene, including what our profession can do to arrest the destruction of children's teeth, it would be worth our effort.

The first set of teeth usually begin to appear when the child is six months old, the anterior teeth appearing first. From these until the age of six years, these teeth should remain in place. Then is the time, of all others in life, for a child to be good looking. It began life looking about the mouth like its grandmother, or perhaps, like its mother, with her grinders in a bowl of water, or away to the shop for repairs; but now, there is perfect harmony between the little face and the little teeth.

I said from the age of three, to that of six, the first teeth should remain intact, and the face should be symmetrical; but how is it from six to twelve, or thirteen, and from that to twenty, when an entire new set of teeth, thirty-two in number, shall have taken the place of the first set of twenty? It is moving time in the poor child's mouth now. Excuse him. For a little while the new comers look as if they would like to make themselves at home, if they could. A twelve year old boy will be overcome by his teeth, as he would in a man's suit of clothes, only the other way.

Soon after the thirteenth year, those overgrown teeth, just as large as they ever will be, will assume proper relations with the constantly growing face.

Would that there were no more troubles about children's teeth than that connected with their development.

It is said everything has its enemy, its worm to destroy its symmetry.

If destruction is greater anywhere in the universe than in the young person's mouth, I do not want to see it. It would seem the enemy could afford to wait until mature age at least, if not until the natural forces begin to fail, when the eye grows dim and the ears deaf, from age. But, no; in the average child's mouth, destruction is seen every time you look into its smiling face. You take courage, however, when the sixth birthday anniversary arrives, for you behold new teeth, taking the place of the old ones; but if you knew it all, and knew how much longer the twelve back teeth are required than the front ones, in the child's first set of teeth, you might not think a dentist a scoundrel after all, for going and filling baby teeth, when he knew they would come out. Four very important permanent grinders are pretty sure to put in an appearance just back of the temporary molars, a little before the front teeth begin to come out. Great wisdom is seen in this, as such an arrangement secures to a child sixteen strong grinders, including the canines, during the two or three years he is changing his eight front teeth. But how is the average mortal to be made to understand all this, that these teeth need careful attention, that children, from three to thirteen years of age, should be as regular in their attendance on their dentist as older folks, and even more so if they are to preserve their teeth in after life. It is said that 'he who knows nothing, fears nothing.' I think sometimes, after trying, with my best efforts, to have parents know something of this matter, that it might better be said: 'He that fears nothing, knows nothing, and can never be made to understand.' One of our old colored bricklayers said to me once, 'Doctah, I always gits skeered when I builds a chimbly.' When people 'git skeered' over their children's teeth, and 'git skeered' in time, and keep 'skeered' all the time, then, and only then, will the poor child have the attention from the dentist that it should have."

DISCUSSIONS.

Dr. Stephan, Cleveland, said he had been much interested in the subject of children's teeth. The teeth were more sensitive than in older people, and, in approximal cavities, the pulps were so nearly encroached upon, that we often expose them, and do not know it; when, if they were filled in this condition, the pulps would die. The selection of materials for filling is very important.

Dr. J. W. Lyder, Akron, O., said that he had, of late, given more attention to this than any other part of his practice. He had been independent, and demanded the child alone, if possible. If the patient was very nervous, he simply treated the tooth with clove oil, or something of the sort, and dismissed the patient for that day. After operations in children's mouths, he made it a point to give the little ones some picture cards, or even little dishes, and notwithstanding the operation might have been quite tedious and painful, the child was always anxious to return for another operation, in hopes of receiving more presents. Where the pulp was nearly exposed, he used cement, mixed with clove oil, or beech creosote; or, used chloroform and Hill's stopping, applying the chloroform first. In approximal cavities facing one another, he sometimes bridged across with gutta percha, or some light filling, where it was to be but temporary. He recommended Delos Palmer's clamps, as they hurt less, when applied, than any other. He sometimes used amalgam, but did not believe in the use of gold or tin foil for children's temporary teeth.

Dr. Barnes, of Cleveland, said, get the parents to stay at home, if possible, and let a playmate bring the child. It will stimulate her. The parent, as well as the dentist, should be honest with the patient; and if it is going to hurt, tell him so. Gutta percha placed in the cavity, and amalgam on top, makes a good filling for temporary teeth. Pulpless teeth I do not fill, but medicate as best I can.

Dr. Colty. I never took kindly to amalgam. I use Weston's insoluble cement.

Dr. Lalley. I have kept my children's teeth in good repair with Hill's Stopping, but it must be watched. A child can stand much more of the gutta percha on a nerve than older people.

Dr. Barnes asked if the gutta percha would not press on the gum?

Dr. Lalley replied that the first third should be filled with Hill's Stopping.

Dr. Gibbons, of Warren. In regard to managing children, I use the rubber dam and insist on it, as I think no good filling can be made without it. The dentist should get control of the child by kindness, gentleness, and, above all, firmness.

Dr. F. S. Whitslar, Youngstown, said that cleanliness of children's teeth was very necessary. Let the mother begin to teach the child to clean its tooth as soon as one appears. If the teeth are kept scrupulously clean, it is a question if they will ever decay. For the deciduous teeth, Hill's Stopping, gutta percha, and Weston's cement, are the best materials for filling. The rubber dam is a necessity. Where the pulp is nearly exposed, I use cotton saturated with eugenol, or cement and iodoform ¼ parts. Then creosote paste and cement. Cut camphor and eugenol is good for the deciduous teeth. Would recommend children to use picks as well as brushes.

Dr. Bell, Cleveland, said he thought that compound cavities would do better filled with cement, coating the filling over with shellac is a good preventive of its dissolving out immediately.

Dr. Phelps, of Chagrin Falls, thought every child had its price to be governed. He gave five, ten, twenty-five, fifty cents, and even dollar pieces to the child, if it would have the operation performed; and then he charged up the amount to the parents.

SECOND DAY—MORNING SESSION.

The subject of the previous evening was further discussed.

Dr. Gibbons, of Warren, said the materials for filling are so numerous, it is the inclination for dentists to go from one hobby to another until they are gray and die. The only materials I find, in the majority of cases, to be of benefit, are gold, tin, gutta percha, and occasionally better than none, amalgam. I have never seen an amalgam filling that was a good one, although I have seen fillings stand for years. I mean these fillings are not good for the case. I think tin foil, in a soft chalky tooth, is better than gold, because it will preserve the tooth longer. In filling a tooth with gutta percha, I find it unsatisfactory unless the dam is applied. The cavity should not only be dry, but the tooth should be warmed. Some advocate leaving a portion of decayed dentine over the pulp, but I don't have good success in this. I dress as close to the pulp as possible, and get better results.

Dr. Dewey, Cleveland, thought absolute dryness a necessity, and, therefore, the dam should be used. He used Robinson's foil in preference to tin, it being of special value at the cervical wall, under gold fillings. In small cavities of children's teeth he used amalgam, but always used the plastic fillings in larger cavities.

Dr. Bell, Cleveland, said that where the pulp was nearly exposed, he painted the cavity with iodoform, which formed a coating, and then put in the plastic filling, using as hard as possible. Then he burnished and put shellac over it.

Dr. H. F. Harvey said to give phosphate fillings plenty of time to harden. Gold and tin combined in equal quantities, No. 4 gold, and No. 3 tin foil, cut in strips, was a good filling material, but it worked harder than gold alone. Children's teeth he filled with tin, or Robinson's foil, then took a large drill, and drilling into the filling, filled it up with gold. This gave a hard masticating surface.

Dr. F. S. Whitslar, of Youngstown, read a very interesting paper for the good of the order, viz: "How may we raise the standard of appreciation of Dental services."

"Incidents of Office Practice" was taken up as the next topic.

Dr. J. W. Lyder, Akron, spoke of the Robinson remedy in pyorrhea, and said he found it too strong; that he got equal parts of potash and carbolic acid put up by a home druggist, and found it a superior article. If it is too strong dilute with glycerine.

He then spoke of poisoning resulting from the use of rubber plates, citing some cases where five different plates had been tried, but without success, until a gold plate was inserted, from which time the trouble has disappeared.

Dr. Whitslar spoke of gold lined plates, and demonstrated the Barnes' method.

Dr. Poole stated that, after teeth had been replanted, the roots would be absorbed. He exhibited some where the absorption had been complete.

The following officers were elected for the ensuing year:

Dr. J. E. Bell, Cleveland, *President;* Dr. John Stephan, Cleveland, *Vice Pres't;* Dr. S. P. Dewey, Cleveland, *Corresponding Secretary;* Dr. L. P. Bethel, Kent, O., *Recording Secretary;* Dr. Chas. Buffett, Cleveland, *Treasurer.*

Adjourned to meet in Cleveland, one year hence.

THE MISSION OF HUNGER.

BY HORACE BONNER, A.M., M.D., DAYTON, OHIO.

[Written for the Xenia Young Men's Christian Association and read before the Xenia Academy of Medicine.]

When our Divine Master gave to his disciples a form of prayer, the first personal petition in it was for the nourishment of the body, "Give us this day our daily bread." And as long as there is life on the earth, at each morning's dawn, the matin of all animate nature will be, "Give us this day our daily bread." For food is a necessity to all forms of life. The tiny, gray lichen clings to the bleak rock and throws out its little fronds to catch its food from the morning breezes, while the great forest trees, through their numerous roots and rootlets, draw their nourishment from the bosom of Mother Earth. The little polyp, firmly anchored to its coral base, by moving its delicate tentacles constantly bathes its body with a current of water from which it extracts its food, while the ocean monsters swim the great deep, seeking what they may devour. In the bright sunlight, myriads of insects flit back and forth; far above soars the eagle; and through the forests roam the beasts, all in search of their daily food. If deprived of food they readily succumb to disease, and eventually die. And man also is a slave to hunger, and must spend a large portion of his time, and employ all his God-like attributes, in providing himself with something to eat.

A recent distinguished lecturer beautifully demonstrated to you that art, music, poetry, the social instinct, and even a mother's love, are largely inspired by the sexual appetites. Hunger, too, has been a powerful agent among the peoples of the earth. History, sacred and profane, furnishes numerous examples where its potent influence has changed the destinies of whole nations. Its influence on individual destinies cannot be estimated, or even fully conceived. All business—the entire commerce of the world—has, as its inspiration, the appetite for food.

"Necessity is the mother of invention," says the old saw; but hunger is the mother of necessity. Hunger is the only appetite, except thirst—and to-night we include both in the term hunger—whose gratification is essential to life and health.

"He may live without books,—what is knowledge but grieving?
He may live without hope,—what is hope but deceiving?
He may live without love,—what is passion but pining?
But where is the man that can live without dining?"

The "Battle of Life" is the battle for food; and the noise of this battle is the hum of manufactories, the roaring of railway trains, the shrieking of steamboat whistles, the whirr of reaping and threshing machines, the rumble of wagons, the din of hammers, trowels, shovels, picks and axes, the ticking of telegraph instruments, the scratching of pens, and the thousand and one sounds of words, from which our ears are never free day or night. Fighting side by side in the battle are the merchant prince and his "cash boy," the wealthy manufacturer and his humblest employee, the great contractor and his day laborer, the rich and prosperous farmer and his boy that does the chores, all striving, with might and main, driven to it by the demands of hunger. To learn the mission of the appetite in the animal economy, and to discover how and when it should be gratified is our lesson to-night.

Nature is a strict economist. She wastes nothing. Energy once created is eternal. In one form or another it is present through all time. The energy of the rays of the summer sun is not lost, but is stored away in the compounds of vegetable life. We are to-night warmed by heat which the sun sent to our earth thousands of years ago. A provident Nature stored it away in the form of coal; and in the furnace below she is forming new compounds of this coal and the oxygen of the atmosphere; and in the change, heat is liberated. The steam engine does not originate force. It is simply a machine which turns the energy of the sun's rays, preserved in the vegetable world, to the accomplishment of mechanical work. By the burning, or oxidation of the coal in the fire box, the energy there stored away in a potential state, becomes active, and is, by means of machinery, put to service. The food which we eat is like the coal, simply so much potential energy; and the body may be looked upon as a machine in which this potential energy is again rendered active. A fearfully and wonderfully constructed machine, into which inert food is taken, and from which it issues as mental and physical energy!

Food is divided, according to its chemical composition, into nitrogenous, or compounds in which the element nitrogen is found, and non-nitrogenous, or compounds in which the element nitrogen is not found. The nitrogenous foods are frequently called albuminoids, or proteids. Eggs and the lean of meats are examples. Vegetables and cereals also contain proteids. The fats and the starches, sugars, and gums found in fruits and vegetables, are examples of the non-nitrogenous group. Hunger is a requisition from the exhausted organs and tissues for a fresh supply of energy. Digestion is the process by which food is prepared for appropriation or assimilation by the various tissues. The first step in this process is mastication, or the grinding of the food between the teeth, so that the various digestive fluids can better act upon it. At the same time there is mixed with it the first one of the digestive fluids, the saliva. This fluid serves the mechanical purpose of moistening the food, so that it can be more easily swallowed; and it also exerts a chemical action upon it, converting the starches into sugar. But the chemical action of the saliva is limited, because the food remains only a short time in the mouth; and the action ceases when it reaches the stomach. The lining membrane of this organ secretes a peculiar acid fluid called the gastric juice, which has the power of digesting or dissolving proteids. By the contractions of the muscular walls of the stomach the food is rolled about, and thoroughly mingled with the gastric juice, so that every portion of it may be subjected to its action. In the course of time. the contents of the stomach are reduced to a semi-fluid condition, and then, by the action of its muscular walls they are crowded along into the bowels. The time of digestion varies from one to five hours, according to the character of the food.

While the digestive process is going on in the stomach, the blood-vessels are constantly absorbing the digested proteids and the soluble sugar resulting from the action of the saliva on the starch. In the stomach the fats and the greater parts of the starches remain unchanged. But the digestive act is still continued in the intestines, though under different conditions. The contents of the stomach were decidedly acid. But almost immediately after they enter the intestine, the bile, which has been secreted by the liver, is poured in upon them, and they are rendered alkaline. At the same time a fluid, called the pancreatic juice, is poured in from the pancreas, called the "sweet-bread" in the lower animals, and also a fluid secreted by the walls of the intestines themselves. Under the influence of these fluids the transformation of starch into sugar, which was checked by the acidity of the stomach, is resumed, the digestion of proteids is continued, and the fats are emulsionized, *i. e.*, they are broken up into the most minute particles. The digested proteids, and the starches changed to sugar, are taken up by the blood-vessels of the walls of the intestines, while a special set of vessels, called lacteals, is provided for the absorption of the emulsionized fats, which, later on, are poured into the general circulation. That part of the food which is indigestible, and unfit for food, remains in the bowels, and by the contractions of its muscular walls, is crowded along, until it is discharged as feces.

We have now traced the food into the blood. To determine the changes which it undergoes after it has reached this stage, is a very difficult matter. "We may fairly presume," says that eminent physiologist, Dr. M. Foster, "that many parts of the body are engaged either in further elaborating the comparatively raw food which enters the blood, in order that it may be assimilated with the least possible labor, by the master tissues (*i.e.*, the muscular and nervous tissues), or in so modifying the waste products which arise from the activity of the master tissues, that they may be removed from the body as speedily as possible. There can be no doubt manifold intermediate changes of this kind do take place in the body; but," he adds, "our knowledge of the matter is at present very imperfect." But we do know that the final changes, the real transformation of food into energy, nervous and muscular, mental and physical, take place in the tissues themselves. When we remember that on this assimilation and transformation of food all vital action depends, we begin to realize the importance of our subject. While life lasts our hearts, "like muffled drums," continue to beat, and our breathing does not stop, the skin is constantly performing its function, the secretory and excretory organs are always at work, over all, governing and presiding, is the nervous system, and all this goes on ceaselessly, sleeping and waking, day and night, year in and year out. What an immense expenditure of energy is required to accomplish all this! and yet this is only a partial enumeration of the involuntary activities of the body. Add to this the energy of all voluntary action, mental and physical, and the sum is prodigious. No wonder that, after a few hours of hard marching, the soldier gives out, that the laborer soon becomes exhausted, that the brain of the scholar breaks down under prolonged mental effort, and that all feel "tired and hungry." With the key given us we easily read, in this tired and hungry feeling, a message from the various tissues saying, "Our supply of energy is fast becoming exhausted; we need food, and also a little time in which to assimilate it."

Life and health, therefore, depend upon the supply of a proper quantity and quality of food. But what is a proper "quantity and quality" of food? A question very difficult to answer. Indeed an exact answer, applicable to each individual, is impracticable, if not impossible. By careful experimentation and calculation, it has been ascertained that a man of average size, in a temperate climate, and doing a moderate amount of muscular work, requires about three pounds of solid food, one-fourth of which should be animal, and the remainder vegetable, and about half a gallon of water per day. On such a diet he will neither gain nor lose in weight. But if the work be increased or diminished, or if the climate be changed to a warmer or colder, the supply of food must be increased or diminished, according to the circumstances; and the relative proportion of its nitrogenous and non-nitrogenous constituents must also be varied to meet the altered necessities of the system. This is, of course, an ideal diet; but it has a practical value in that it forms the basis of the dietaries of prisons, asylums, garrisons, and all other institutions whose inmates are fed at public expense. It will be of service to us also, for it will form a basis for our study.

There is a great diversity, both in the quantity and kind of food consumed by the human race. A study of the foods of the savage and half-civilized nations is full of interest; and it also furnishes much instruction. We find them varied according to the climate inhabited, and to the conditions and habits of life. Thus the arctic tribes live almost exclusively on animal food, which they usually take raw, and in immense quantities. They especially relish oils and fats. Sir John Ross says an Esquimaux eats, "perhaps twenty pounds of flesh and oil daily." The inhabitants of the temperate zones also live chiefly on animal food, though they consume more vegetables than the arctic tribes. They are not such enormous eaters, though gluttony is common to all savage tribes, and they do not eat so much fat. The tropical tribes are, in the main, vegetarians, and are usually more abstemious in their habits. Among civilized peoples, we find the same diversity resulting from climatic influences; but a much greater influence is exerted by individual conditions and habits of life. And this changing of food, to suit the different mental and physical conditions, is not the result of a process of reasoning, but is in answer to the demands of the appetite, which expresses the varied needs of the tissues resulting therefrom. Thus arctic explorers find themselves craving an abundance of fats; and they very soon begin to relish raw meats. Many of you have doubtless noticed that in the colder winter weather you desire a much larger quantity of meat than usual, and you do not, as usually, object to it because there is an increased proportion of fat in it. Fat contains a large per cent. of carbon; and the appetite demands it because Nature knows that by oxidizing this carbon, she can generate a sufficient amount of heat in the system to compensate for that lost by atmospheric radiation. Sugar and starch also contain carbon in considerable quantities. Hence the relish during the winter months for buckwheat cakes, with plenty of butter and maple syrup. A friend of mine, at one time connected with the regular army, told me recently that while stationed at one of the outposts in the Rocky mountains, he frequently fortified himself against the cold and exposure of a long ride, by eating freely of the fatty drippings from roast beef mixed with sugar, and that his appetite demanded it. Hardly so palatable as the buckwheat cakes, butter and syrup; but it served the same purpose, and was probably more effectual. Again, you remember how urgently, when winter is over, and the weather begins to get warm, your appetite demands fresh vegetables. Later on come the berries and melons and ripe fruits, all of which are relished in their season. Just as the appetite in cold weather demands a heat-producing food, so in warm weather it asks for a food that is not heat producing, and will otherwise place the system in proper condition for withstanding the heat and exposure of summer. You have also noticed that when engaged in manual labor, or in violent exercise, as baseball or hunting, you require a very substantial diet in very liberal quantities. Especially do you want plenty of nitrogenous food. But when engaged in some sedentary occupation, you have no relish for such a diet, but want a lighter and more easily digested one. The delicate, city-bred lady should not be thoughtlessly condemned because she cannot relish the substantial fare of the farmer. It is not what her system requires; and her appetite, true to its mission, refuses to sanction the eating of it; and the laborer cannot help it that he finds the light, simple fare of the student insufficient for his needs. Man is superior to all the animals in the power of adapting himself to a great diversity of food. His digestive apparatus is constructed for digesting both animal and vegetable food; and, as this fact would lead us to expect, he reaches the highest state of physical and mental perfection on a mixed diet, which should consist of about one-fourth animal, and three-fourths vegetable food. Consequently we find the highest type of man in the temperate zone.

Beyond these general considerations, the answer to the question as to "quantity and quality" of food is to be found in the appetite, or in "Hunger." This is the guide which Nature has furnished each of us, to direct our eating and drinking. Like all our appetites, its purpose is beneficient; but it will not do to blindly follow its guidance. Above our appetites we are endowed with reason, and it is only when they are followed in accordance with its dictates that they lead to unalloyed pleasure. "In taking appetite as a guide in the supply of food," says Dr. Pavy, an eminent authority, "it must not be confounded with a desire to gratify the palate. When food is not eaten too quickly, and the diet is simple, a timely warning is afforded by the sense of satisfaction experienced as soon as enough has been taken; and not only does a disinclination arise, but the stomach even refuses to allow this point to be far exceeded.

With a variety of food, however, and especially food of a character agreeable to the taste, the case is different. Satiated with one article, the stomach is still ready for another; and thus, for a gratification of taste, and not the appeasement of appetite, men are tempted to consume far more than is required; and also, it must be said, often far more than is advantageous to health. A normal appetite, properly gratified, will lead to perfect digestion; and when the digestive act is performed as it should be, we are entirely unconscious of it. The food is eaten and that is all we know about it, so far as our sensations teach us. Indeed, the sign of perfect health is unconsciousness. It is only when an organ becomes disordered in its function that we are aware of its existence. "The perfection of bodily well-being," says Carlyle, "is that the collective bodily activities seem one; and be manifested, moreover, not in themselves, but in the action they accomplish. If a Dr. Kitchenor boast that his system is in high order, dietetic philosophy may indeed take credit; but the true peptician was that countryman who answered, that for his part, he had no system."

Conversely the first symptom of disease in an organ is the consciousness of its existence. "It is only discord," says the same quaint author, "that loudly proclaims itself. So long as the several elements of life, all fitly adjusted, can pour forth their movements like harmonious tuned strings, it is a melody and unison." But, as a matter of fact, it is a rare thing to find any one in whom all the organs act in unison, "like harmonious tuned strings." This is especially true of the digestive organs. An improper kind of food, or an excess or deficiency of supply produces very profound disturbances in them. But little need be said of the effects of an insufficient amount of food. They are not so common as those of excess, and are better understood. Every one knows the effects of an insufficient supply of food on the laboring capacity of the individual; and the physician knows, by frequent observation, that it is often a cause of ill-health. Persons poorly nourished become pale and sallow, and lose flesh; have no disposition to work, and are easily fatigued; suffer with neuralgic pains, and a depression of the vital powers, and, in time, become a prey to disease, which often ends in death.

A much greater source of evil is the excesses in eating and drinking. Hunger, the exalted form of appetite, is, by many persons, rarely or never felt. And yet the consumption of at least three meals a day is deemed an essential to health; and consequently, culinary skill is exhausted in inventing rich and highly seasoned dishes to tempt the palate. "The promptings of instinct are thus overruled, and it is the inclination instead of the appetite that regulates what is consumed." Truly has a learned physician said, "Were it not for the temptation to exceed, induced by the experiments of the culinary art, the physician's aid would be much more rarely required." The effects of excess in eating are of all grades from the transitory discomforts following a christmas, or thanksgiving dinner, to the physical and mental wreck found in the confirmed dyspeptic. The symptoms of indigestion are legion. Oppression from an overloaded stomach; "belching," "heart-burn," and "water-brash"; "palpitation of the heart"; "nausea" and "vomiting"; "bad taste in the mouth," especially in the morning; "coated" tongue, "aphthæ," or ulcers in the mouth; "dizziness," with "blurring of the eyes," "torpid liver," and "constipation"; tendency to "sore throat," with a disposition to "hawk up phlegm"; "skin eruptions"; "headaches," sometimes very intense and accompanied by "sick stomach"; perverted nutrition, leading to obesity, or excessive "fatness," or to gouty and rheumatic affections; and, much more distressing than actual physical pain, a general sense of misery, of mental discomfort and wretchedness; and a feeling of utter unfitness for work, and inability to collect the thoughts. "This mental attitude of gloom," says Dr. Fothergill, "apprehension, distrust and incapacity intensifies the physical discomfort, and tends to cause the sufferer to have misgivings that the malady is something more than mere indigestion. A haunting fear that the brain is the seat of disease when there is headache, the heart where there is palpitation or irregular action, tortures the unhappy sufferer. The remembrance of this impression hangs like a dark cloud over the interval of comparative health; while the anticipation of another attack is projected like a shadow in front of it."

And this brings us to what will, perhaps, be considered the most important part of our subject, viz.: the influence of bodily conditions upon mental activities. The old Latins were right in their belief that a sound mind can exist only in a sound body. Nevertheless it has been, and still is, the practice of many to neglect and even belittle any consideration of the body, and to turn their whole attention to "elevating the mind," as they are pleased to term it. Preachers and professors have united in representing the mind to be "a mysterious entity, different essentially from, and vastly superior to, the body which it inhabits, and uses as its earthly tenement; but from which its noblest aspirations are thought to be to get free." And yet we have no knowledge of the mind, except as it is manifested to us through the nervous mechanism of the body. We see, we learn, we smell, we taste, we feel; and in perception by those senses, we find the basis of all our knowledge. Hear then the logical conclusion, as given by the learned Dr. Maudsley: "It behooves us to clearly realize the broad fact, that all parts of the body, the highest and the lowest, have a spmpathy with one another more intelligent than conscious intelligence can get, or perhaps ever will, conceive: that there is not an organic motion, visible or invisible, sensible or insensible, ministrant to the noblest or to the most humble purposes, which does not work its appointed effect in the complete recesses of the mind; that the mind, as the crowning achievement of organization, and the consummation and outcome of all its energies, really comprehends the bodily life." And is it not probable that Paul may have had the same idea in mind when he said, "For I delight in the law of God after the inward man: but I see another law in my members, warring against the law of my mind, and bringing me into captivity to the law of sin which is in my members."

While it is no doubt true that every organ, when functionally active, does work "its appointed effect on the mind, this is preeminently true of the digestive organs. There is such an intimate connection between them and the brain that different kinds of food have been thought by some to be productive of different mental states. Thus the artist Fuselli was in the habit of eating meat, when he wished his imagination to conjure up horrible fancies for his canvas. Hippocrates maintained that all men are born with equal mental ability, and that subsequent variations in mind are due to difference in diet in after life. But the intimate connection between the digestive organs and the mind becomes already manifested to all, when the digestive act is, in any way, disturbed. It is scarcely necessary to do more than mention this fact. Doubtless many here have it fully demonstrated to them by personal experience; and if not in this way, he would indeed be dull of apprehension who had not learned it by observation. For one of the first things we must learn in our associations with our fellowmen is, over a great many of their actions to throw the broad mantle of charity, and to credit them up to a disturbance of the digestive organs. "I guess his dinner must have disagreed with him," is the explanation offered when we see an unusual, and perhaps absurd exhibition of temper. "He is bilious," is the ready popular diagnosis, when any one is irritable, and has a tendency to borrow trouble, and be melancholy. The very word melancholy is derived from two Greek words, meaning "black bile," or bilious, when indigestion becomes confirmed, or chronic, and the individual becomes suspicious of every body, and objects to every thing; when he thinks prominent men are all dishonest and "schemers," and men not prominent are ignoramuses, and all men are liars, and every man has his price; the church is full of hypocrites, the political parties wholly and entirely corrupt, and the "country going to the dogs"; we call him a "crank," and crank (krank) is the German word for sick.

The lamented Dr. Clendenin used to assert, in a jocular way, that it is all nonsense to locate the seat of the affections in the heart. "It is in the stomach," said he; and as proof, he was accustomed to relate how a newly married couple, who were going to Europe on their bridal trip, were exceedingly demonstrative in their affection for each other, when they first came on ship-board; but when their stomachs were upset by sea-sickness, with the entire length of the vessel between them, they were oppressed with a sense of nearness. Thackeray noticed that, "sometimes, especially if he had been dining late, and did not feel in a remarkably good humor next morning, he was inclined to make his characters villainously wicked; but if he rose serene, with an unclouded brain, there was no end to the lovely actions he was willing to make his men and women perform." "What do you think of Carlyle," I asked of a learned friend of mine, an Episcopal clergyman. "He was a grand good man, with the dyspepsia," was the reply, and it was the best and most just estimate of that great hater of shams that I ever heard. Granted, that he was sometimes caustic, and, perhaps, even ill-tempered. Hear his own testimony before condemning him. He says: "The accursed hog, dyspepsia, had got me bitted and bridled, and was ever striving to make my living day a thing of ghastly nightmares; I resisted what I could, never did yield or surrender to her; but she kept my heart right heavy, my battle being sore and hopeless."

We sympathize deeply with those who go through life, all the time fighting the appetite for strong drink; and we ought to, for they merit and need our sympathy. But there is little or no sympathy for the dyspeptic, though of all such it can truly be said, "their living day is a thing of ghastly nightmares." Some indeed resist it to the last, in a "sore and hopeless battle," and leave behind them noble works, wrought out in toil and suffering, as did Carlyle. But many are overpowered by it, and die in despair. To us their actions must be to a certain extent incomprehensible. The mental conditions of the physical sufferer are ever incomprehensible to those who have not experienced them. In passing judgment on such we should always remember that,

> "What's done we partly may compute,
> But know not what's resisted."

And yet, while we pity these poor sufferers, we should never lose sight of the fact that, physical suffering is a punishment for the violation of Nature's laws. Dyspepsia is just as surely a punishment for breaking the laws of health as is delirium tremens. And this is true of all other discomforts and diseases, mental and physical, great and small, which result from an improper gratification of the appetite for food. "I can eat any thing at any time," says one, "and am never troubled with indigestion." My dear, sir, you are fortunate; but beware! It will not always be so unless you are careful. Your horse may be able to make his mile in three minutes, but you cannot safely drive him twenty miles in an hour. And it behooves those who have a tendency, either hereditary or acquired, to disorders of digestion, to be still more careful. Be temperate in your eating; eat at stated periods; seek to satisfy the appetite, not to gratify the taste.

Young gentlemen, would you be free from pain and disease? Study the laws of health. Would you be strong in body and in mind? Study the laws of health. Don't spend your money for "Doctor books," to know how to treat disease. Your doctor will do that for you, and he will do it a great deal better than you can. You can much more profitably spend your time and money studying anatomy, physiology, and hygiene. Learn how to be healthy; and you will have no use for the "doctor books," and not much for the doctor. And not only will it pay you to acquaint yourself with the laws of your being, but it is your duty. Your duty to yourself. You cannot accomplish the work given you to do without health; and you cannot have health unless you know the conditions necessary to health. Ignorance is no more an excuse for violating the laws of physiology than it is for violating the laws of the State. Indeed, in the latter case it is possible to escape punishment; in the former punishment is inevitable. Let those burning words of Dr. Reeve brand themselves into your memories: "There is a physiological religion; and in that religion there is no remission of sins." It is your duty to your fellowmen. You have no right to break yourself down, and impose your keeping on others; or to add to their burdens by complaints, unjust actions, poor service rendered, or in any other way that may result from your own neglect or ignorance of the laws of health. It is your duty to your Creator, for, in the words of the inspired apostle, "If any man defile the temple of God, him shall God destroy: for the temple of God is holy, which temple ye are."

THE EXACT NAME OF COCAINE.—Cocaine, ecgonine, and isotropine are derived from ethyl-tetra-hydro-pyridine, just as tropine is derived from methyl-tetra-hydro-pyridine. Isotropine is the methol-ethyl-tetra-hydro-pyridine; ecgonine is the carbonic acid of methol-ethyl-tetra-hydro-pyridine; and cocaine, a di-ether of the former, is *methylic-benzo-methol-ethyl-tetra-hydro-pyridine carbonate.*

DENTAL COLLEGE INFIRMARIES.

BY A. BERRY, D.D.S., CINCINNATI.

The discussion of any subject important to the dental profession is proper in dental periodicals and societies.

That the management of infirmaries of dental colleges is of great consequence to the profession, will not be denied. It is by instruction in manipulation that the student is enabled to become expert in the uses of scientific teaching.

There is no uniform manner of conducting the college infirmaries. In some of them the operations are performed under the supervision of the professors, while in others, assistants, and sometimes students have control.

The patients are generally supposed to belong to the impecunious class; and the charges for services are presumed to be slightly in excess of the cost of materials used. In every large city an ample supply of patients could be readily procured, whose financial condition is such that eleemosynary operations for them at the infirmaries would not be improper. But under the existing management, many of those enjoying the benefits of infirmary practice, are abundantly able to pay the customary fees. It is reported on good authority that a lady, worth fifty thousand dollars, recently availed herself of the inducements held out by a dental college to the extent of a full set of teeth for ten dollars.

With a large class of people who do not discriminate wisely, the infirmary fees tend to degrade the prices usually charged for dental services. With provoking effrontery they tell the dentist, whose charges they are endeavoring to get reduced, of the trifling fees paid at the infirmaries. They seem to suppose the operators who proffer their services at one dollar for a gold filling, and five dollars for a full superior or inferior set of teeth, the only honest and honorable members of the dental profession, and that all others are extortioners. Formerly this evil was of comparatively little consequence; but at present, with a college infirmary or more, in nearly every large city of our country, it is of great importance, and should be remedied.

Our English cousins conduct their dental hospitals more judiciously; the expenses being defrayed by subscribers, and no fee charged for services. Each patron receives a ticket, proportioned in number to the amount of his donation, which he distributes among his servants, and other poor people, entitling them to admission into the hospital. A similar course might be adopted at our infirmaries, avoiding unfortunate interference with neighboring practitioners.

HOW MAY WE RAISE THE STANDARD OF APPRECIATION OF DENTAL SERVICES?

BY DR. F. S. WHITSLAR, YOUNGSTOWN, O.

[Read at meeting of Odontological Society of Western Pennsylvania and at the Northern Ohio Association.]

The subject involved in answering the above query is a broad one, and covers so much ground that time would fail us to discuss it in all its bearings. There is a negative as well as an affirmative side to the subject. In considering the negative side we introduce to you two classes, the extremes on that side of our subject. The first class of these extremes are known as the charlatans in the profession, persons that entered the profession because they thought it an easy and genteel life to live, ignorant even of its first principles, and too lazy to inform themselves. They have presumed enough upon the ignorance of the public, with reference to dentistry, to try and palm off their impudence for wisdom and ability; persons whose pretensions are spread broad-cast by newspapers, and who rob innocent victims that they have induced to patronize them; pretensions that shut them out from the society of the respectable portion of the profession, and if, perchance, they are ever to be found among them, their sneaking countenances denote a consciousness of their own guilt being as transparent, and as plain to be seen as the mark set upon Cain. The other extreme is that class of individuals who perch themselves so high that they fancy that they have no equals, that arrogate to themselves what they do not possess, and assume positions that they are incapable of filling, and wrench from the pocket of honest persons money which may be counted as illy-gotten and which is usually illy-spent. They are men that express opinions and give advice without a knowledge of facts, that do, by a look, a wink, or a nod, strengthen that opinion of some unreasonably dissatisfied patient as to the dishonesty of his dentist, that seek to point out defects that only exist in their preconceived notion of things, that insinuate that the non-payment of the bill would be the proper course, or rather than be honest and acknowledge that there are other beings in existence than themselves, suggest some other trouble, perhaps an alteration or perchance a lawsuit. We have all witnessed these things, and, doubtless, have been led to wonder how such *massive* minds could meddle with such *small* matters. The pretenders are found everywhere. You have them in this great and busy city, we have them in Ohio. Mere pretenders who when asked for an opinion, have not enough intelligence to give one, but plant themselves immediately upon their position as sufficient for all that they may utter, that as a fortification for their wits, station themselves upon some high place, surround themselves with inventions and gew-gaws, the work of other minds and hands, to divert from their real character, and assist in establishing their identity.

These two classes are the extremes of our profession, and while seemingly so widely separated, are actuated by the same spirit, differing only in this that the narrow conception of the one prompts him to promise everything for nothing, while the impudence and avarice of the other demand for nothing everything. These, with the "go-betweens," constitute the mill-stone which hangs upon the neck of the profession, and tends to pull it down to the level of their own dishonesty, and as a result destroy a due appreciation of the value of dental services.

In answering the question affirmatively, one of the key-notes was struck forty-five years ago last August, when the American Society of Dental Surgeons held their first meeting in the city of New York, and then and there declared, in the first article of their constitution, that while it was their object to advance the science of dentistry by free communication and interchange of sentiments, either written or verbal, to give character and respectability to the profession, a line of distinction be established between the truly meritorious and skillful, and such as riot in the ill-gotten fruits of unblushing impudence and empiricism. "By their fruits ye shall know them," is as true to-day as when uttered eighteen hundred years ago. Moreover that there is a recognition of the value of associated effort expressed in general conventions and local societies, as eminently conducive to a better understanding of the principles and practice of dentistry, and its influence in developing and enlarging the boundaries of the art and science, is appreciated, permit me to introduce the following witness:

DR. HOLMES' TOAST TO THE DENTISTS.

In declining an invitation to dine at the Hotel Brunswick with the New York Odontological Society Wednesday night, Oliver Wendell Holmes wrote: "I often think of the forlorn condition of some of the great personages of history in the days when there were no dentists or none who would be recognized as such by the dental artists of to-day. Think of poor King David, a worn-out man at 70, probably without teeth, and certainly without spectacles. Think of poor George Washington, his teeth always ready to drop like a portcullis, and cut a sentence in two. See him in Stuart's admirable portrait, his thoughts evidently divided between the cares of empire and the maintenance of the *status quo* of his terrific dental arrangements. Think of Walter Savage Landor's melancholy complaint that he did not mind losing his intellectual faculties, but the loss of his teeth he felt to be a very great calamity.

"I will venture to propose, then, the dental profession and their association as its worthy representative. It has established and prolonged the reign of beauty; it has added to the charms of social intercourse and lent perfection to the accents of eloquence; it has taken from old age its most unwelcome feature and has lengthened enjoyable human life far beyond the limit of years when the toothless and purblind patriarch might well exclaim: 'I have no pleasure in them.'"

Elevate the standard of dental education to a plane where it will demand the recognition and respect of the other learned professions, and you have taken the *first* step in raising the standard of appreciation of dental services.

Dentistry like medicine has had its dark days, its trunk-in-hand itinerant, unskillful manipulations will be long remembered by a too confiding and outraged public. But we take it that a brighter day has dawned, and that dentistry to-day, as represented by the curriculum of her colleges, stands the peer of any of the learned professions; and while there are some who, by dint of hard study and long practice, have made themselves of good report in the profession, and who are revered and respected on account of being self-made men. Their days are fast passing away, and the time is near or at hand, when our colleges will be looked upon of so much importance that none but the *regular* graduate will be respected and patronized, or if patronized at all, it will be only in the capacity of a *quack*. Legislation enactments, of a wise and stringent character, rigidly enforced, are a means to protect suffering humanity, and provide professional skill, that will render services worthy of appreciation. Your attention has been called to the necessity of an elevated standard in dental education. I wish to emphasize the thought by saying that a thorough and correct medical education preceded and resting upon a good course of mental discipline and literary acquirement, must henceforward be regarded as the basis of our superstructure. You may say that dentistry is a specialty in medicine; true,—but a specialty cannot be separate from the parent stock and successfully maintained as an independent profession. Dental surgery rests on the same general principles, and is governed by the same laws that govern general surgery. Hence the same course of study that is demanded in the one case is necessary in the other, as a foundation upon which to base the specialty. Therefore, if the surgeon is a physician—a doctor—so is the dentist, the aurist, the oculist, for all are specialties in medicine. Furthermore, added to this scientific education, the hand and the eye must each be educated in its respective department. To handle instruments properly and dextrously, the hand must be thoroughly trained in mechanics; it must be able to accurately construct whatever the mind conceives. In a word, the hand and brain must harmoniously work together. The correct form, arrangement, color and expression of artificial teeth, can be determined by the educated eye alone; hence its education is of manifest importance to the artistic dentist.

A few words concerning certain virtues which we conceive to be of great necessity to a dentist. Our relations to our patients are intimate, delicate, confiding in their character, and must be preserved inviolable. We cannot be too particular in what occurs in the presence of patients, conversations, manners, habits are all carried home, there to form the subjects for comments and criticism. In short, the dentist should be a good, honest, faithful, polite, intelligent, and courteous man. He should be a christian gentleman.

In rendering dental services worthy of appreciation, every process of practice, whether in the mouth or laboratory, should be gone through with perfect accuracy. The least omission of duty, the least neglect, may, yes nearly always will, result in failure. While operating have as few mishaps as possible; make your guards secure that no instruments shall slip into the soft parts. An injury is scarcely atoned for by apologies. If our patients desire instruction on the teeth, give it to them in such doses as they will be able to bear. Season your teachings with a trace of spice, and avoid the use of technical terms. We should avoid astonishing our patients with two things,—our remarks, and our performances. Truth, and no lying, should gild conversation, and the character of our operations.

In conclusion, we have purposely neglected to say anything about the value of pamphlets, or hand-books of instruction on the teeth, for distribution to our patients, and other matters that will, in all probability, be developed in the discussion to follow. We are content to say—Let our watchword be "Onward and Upward." Let us like the truly brave, face and fight our enemies, and surmount manfully all difficulties. Let us be true to ourselves, honest to our patients, just to our fellow practitioners, and labor in love for the good of the whole profession, that it may be truthfully said—"They did what they could to elevate the standard of appreciation of dental services."

Compilations.

"Gather up the Fragments."

PHYSICIANS AS DENTISTS.

DR. WM. H. ATKINSON, NEW YORK.

[Extract of a paper read before the Connecticut Valley Association.]

No one can be a safe specialist without a general knowledge in anatomy, physiology, pathology and therapeutics. Neither can any one be a safe general practitioner who has lightly run over any region of the human body. In the light of this last statement then, is it not plain that no M.D., who has not also attained the knowledge indicated by a D.D.S., can by possibility, be entitled to decide cases belonging to dentistry? An examination of the text-books and prescribed courses of study in medical colleges will reveal the fact of the meager attention called to the embryology, histology, nourishment, derangements and treatment of teeth, which must lead to the conclusion that competency to understand the management of the teeth in health and departures therefrom, by such instructions is impossible. Nevertheless nearly every dental enactment for the safety of the people against incompetent dentistry has tacitly and openly acknowleged that graduation as physician, or rather as M.D., entitles the holder of such degree to practice dentistry. A most puerile enactment and flagrant abuse of legislative power, and this, too, endorsed by the very men who favored the enactment of such a code of regulating and legitimizing the practice. Yes! dentists in good practice are guilty of such folly, and have the cheek to wipe their lips and say "we have not sinned."

These are the dentists who occupy chairs in dental colleges and hold their positions by the favor of the very M.D.'s whom they know to be unable to legitimately diagnose one-fourth of the cases of defective function resulting from tooth trouble. The journals are full of jumped at conclusions of oculists, aurists, laryngologists and general practitioners, of bad eyes, bad ears, larynxes, and general bodily ailments, arising from defective teeth. The only rationale of the matter is that not being able to satisfy themselves of the source of the ailings they saw, their easy virtue led them to make the teeth a scape-goat for their sins of ignorance. Any practitioner of general or special medicine who has not the moral courage, not to be satisfied till he comprehends the case in hand so as to be able to convincingly state it to others, is derelict in duty if he pronounce an opinion or diagnosis, or if he make a prescription. He has not yet arrived at a diagnosis of the case. If he is not conscious of being authority, he is sure to seek that authority outside of himself, in consultation of books or men, as authority on the subject. But this means not only extensive reading, but thought, and hard study, and independent investigation; and it is this studious, independent class of men we want in our profession, who will come up to this standard.—*Archives of Dentistry.*

THE ORIGIN OF CANCER IN CHRONIC INFLAMMATORY CONDITIONS OF THE MUCOUS MEMBRANES AND THE SKIN.

In the *Sammlung Klinischer Vorträge*, No. 257, Dr. K. Schuchardt presents an interesting contribution to the question of the relationship of cancer to chronic epithelial irritation, especially in the form of psoriasis of the mucous membrane, and senile seborrhœa, the microscopic details of each being carefully considered.

In the first part of the essay, after referring briefly to the history of two cases of sarcoma (of the orbit and of the head of the tibia) following traumatism, the author reports four cases of psoriasis of the mouth, and especially of the tongue, which terminated in carcinoma of the mucous membrane. In a syphilitic subject presenting the same condition, cancer did not appear. Three of the former cases were inveterate smokers. As an especially predisposing condition to cancer of the face was considered seborrhœa senilis. This peculiar affection as is well known, is characterized by the appearance of usually multiple, circumscribed, prominent, yellow or brown, fatty, scaly accumulations. It especially affects the skin of the face, but is also encountered on the thorax and neck, rarely on the extremities; almost exclusively observed in old people of the lower class. Microscopic examination discovered nothing abnormal in the sebaceous glands, while a significant change was detected in the superior layers of the epidermis and in the hair-sheaths, terminating in partial corneous desquamation. The hair follicles were often found entirely filled up with newly-formed epidermic scales. Here and there it was demonstrated that the secretion might have been retained, for sometimes at the root of the hair large or small drops of fat were visible underneath the fatty accumulation. The same granular fatty deposit was also found between the corneous scales themselves, pressing apart the lamellæ of epidermic growth; finally gaining the surface, it gave the fatty character to the scales.

Especially noticeable was also a marked inflammatory infiltration in the superior layers of the corium, especially in the papillæ. Apparently, want of cleanliness, besides advanced age, exerts an influence upon the origin of this disease. This accords with the predominance of the affection in subjects from the lower walks of life, among whom personal cleanliness is wanting. It is in this fact that Volkmann especially sees the explanation of the tendency to cancer of the face, and his experience harmonizes with this view, for at the most only two per cent. of all cases of cancer of the face occurred in the higher classes, who pay more diligent attention to cleanliness. After communicating a few characteristic examples of facial cancer arising from senile seborrhœa (*seborrhagische Carcinome*), Schuchardt expresses the opinion that at an early period of life acne sebacea and xeroderma pigmentosum may also afford occasion for the development of carcinoma.

A short reference to the prophylaxis concludes the essay. With regard to psoriasis of the tongue and mouth, the application of Pacquelin's cautery is especially recommended.—From Kramer's review in *Centralblatt für Chirurgie—Med. Times.*

DENTISTS AND FEMALE PATIENTS.

There have been so many victims to the diseased imagination of hysterical women, among medical men that one is naturally inclined to ask, are we also liable to charges which are as easily made as they are difficult of refutation. The most innocent man might, it is stated upon excellent legal authority, at some epoch of his life, be found guilty of divers and sundry heinous offences, were circumstantial evidence alone admitted or great stress placed upon it. Of course ladies seldom, if ever, come to see us alone, but all rules have exceptions and the exceptions often prove troublesome. Whatever be the nature of the work to be done it should be a rule, as unalterable as though fulminated by the Medes and Persians, that some attendant, preferably a woman, should be within earshot. It is unfortunately uncommon in this country [England] to seek the aid of ladies in our work as dentists. Were we more prone to the custom of having a lady assistant we should have no embarrassment. Medical men are getting more and more cautious of seeing ladies unless in the presence of a third person, and this plan should, we hold, be kept rigidly among dentists. Should a lady come unattended the attendance of an assistant should at once be sought for, and the witness, whether a domestic servant, secretary, or what not, should be placed in a situation when all sounds, and if need be scenes can at once be recognized. Most dental ateliers have some abutting ante-room which can be shut off by a curtain. In such a recess some one should always sit and be able at any time to give evidence as to what was going forward in the operating room itself. We say this solely in the interests of the profession, we believe and we trust that the public need entertain no fear or anxiety as to their safety when committing themselves to their dentists. A large number of ladies especially among the indolent and luxurious are liable to hysterical paroxysms, to hysterical hallucinations and all the consequences such conditions are apt to entail. These poor victims are really not answerable for their behavior. The facts to them are what their imagination pictures them, reasoning is thrown away upon them as the more cogent your arguments may be the less will they seem to accept conclusions which appear to you as mere corrolaries upon your premises. And again many ladies suffer from fainting fits. The mere passing glimpse of a pair of forceps uncautiously left exposed will, in some cases, produce a fainting fit. With such patients the dentist should never be left alone, in everyone's interest it is most important succor should be instantly and skilfully applied. We need hardly speak here of cases when anæsthetisation becomes needed. It is difficult to imagine any dentist whether or not he felt justified in administering the anæsthetic, allowing himself to do so single handed, running the risk of injuring his patient should any untoward event take place during narcosis, and running the risk of being accused by the patient of every crime from picking her pocket upwards.

It is very well for us to say, oh such a case will never occur to me. The laws of averages are very accurate, and you never know when you are engaged upon any patient what will eventually occur.—*British Journal of Dental Science.*

Trifacial Neuralgia.—A Peyronnet concludes that when the urgency for relief is great nothing gives such immediate relief as a spray of *methyl chloride* (first practiced by Debove in 1884). The spraying should be quick and light. The analgesia appears to be due to a congelation of the terminal superficial expansions of the nerves.—*Le Prog. Méd.*

EYE SYMPTOMS FOLLOWING AN UNSUCCESSFUL TOOTH EXTRACTION.

Burnett, of Washington, reports (*Archives of Ophthalmology*, June–September, 1885) a case of an unsuccessful attempt to extract an upper canine, followed by great swelling of the face and eyelids, with abscess of the orbit; and resulting in total blindness from atrophy of the optic disc and obliteration of the retinal vessels.

The patient, a negro, aged 35, had pain in the left upper canine and went to a dentist to have it extracted. The dentist failed after persistent efforts and told the patient that the jaw was broken by the violence of the pulling.

The same evening the left side of the face began to swell and be painful, and the left eye soon closed. As the eye remained closed for two months he could not give its condition, or whether it protruded. At the end of three weeks, during which time there was fever, but no mental disturbance nor chill, a discharge began from the inner canthus, and later from the forehead and cheek.

When the swelling subsided and he could open his eye, he found that vision was abolished.

Examined two months later, there was found a depression at the outer portion of the lower orbital ridge, extending two centimetres down into the cheek, caused by exfoliation of bone. Eye in proper position and its movements perfect.

Ophthalmoscope showed disc white, and sharply outlined. From its lower edge there ran three white lines downward, the remains of the obliterated vessels. From the upper edge ran one obliterated vessel as a white line; and a narrowed artery and vein still containing blood. The fundus was even in tint with two exceptions; pigment patches interspersed with white lines were found in the macula region and in an area a short distance below the disc.

The interest in the case lies in the striking resemblance—the exact identity, in fact—of the ophthalmoscopic appearance to those found in blindness after facial erysipelas. The question of the connection between erysipelas affecting the face and the orbital and ocular changes associated with it has been too recently discussed to render any further comment on the subject necessary. Knapp has, from his careful observation of a case from the beginning, clearly shown, apparently, that all the intra-ocular changes are due to mechanical pressure within the orbit, and that none are due to the specific poison of the disease. This case lends support to that view, for the clinical history does not warrant a diagnosis of erysipelas. On the contrary it is almost certain that there was an abscess of the antrum of Highmore, caused by a fracture of its walls from the forcible but unsuccessful attempt to extract a tooth, which in turn led to the inflammation in the orbit. Further evidence of this is the destruction of a part of the maxillary bone at the lower edge of the orbit.

It has been known for a long time that abscesses in the antrum were attended by inflammation of the orbital tissues, followed by blindness. It can be readily understood how such abscesses of the antrum lead to inflammation and abscesses within the orbit. The wall of bone separating the two cavities is extremely thin, and will give way readily to the increased pressure within the antrum; or the inflammation might be propagated along vessels which pass from one to the other.—*Cin. Lancet & Clinic.*

Editor's Specials.

"Write the Vision and make it plain."

CAPTURED THOUGHTS.

When a schoolboy we had a classmate who each evening, before retiring, endeavored to record the new thoughts gained during the day. These duly recorded thoughts were probably more accurately stamped on the mind than if they had not been thus recalled. He called them captured thoughts.

Accordingly, to render them still more useful, we are, to-day, trying to so use thoughts captured at the March meeting of the Miss. Valley Dental Association.

A paper, written by a physician, for physicians, was read by the present writer. It suggested that it was at least possible that some of the obscure nervous disorders are caused by the influence of mercurial fillings in the teeth; and this was discussed from the standpoint of general practice, rather than from that of our specialty.

In discussing the paper, Dr. McKellops, as reported by the *Medical and Dental Journal*, says, "I am one of the old fossils who never used amalgam, and of course I can talk about it." And in a general way he expressed agreement with the sentiments of the paper. That Dr. M. and Professor Taft have never used amalgam fillings goes to hint that a man can practice with at least some success without them, but the paper was not discussing the amalgam question with dentists.

Dr. James Leslie agreed with the general sentiments of the paper. He regarded it as "scientifically true from beginning to end." And he thought, "any man who has any knowledge of chemistry and electricity must see this." A further remark is imputed to Dr. L. that seems not quite clear to us. The report has him saying, "Mercury sublimates only at a temperature of six hundred degrees, and therefore, it is concluded that the evaporation of mercury can not take place in the mouth." After referring to experiments to prove that mercury evaporates at all temperatures, just as water does, he set up the claim that in amalgam fillings there is neither solution in, nor chemical combination with the mercury, on the part of the other metals used. This is not generally conceded.

We suppose Dr. L. aimed to set forth the idea that mercury *boils* at about six hundred degrees, while it evaporates below its boiling point. Regardless of the temperature, the evaporation of mercury is caused by heat, and sublimation is the result of its vaporization, whether this occurs below, at, or above the temperature of its ebullition.

The success in inserting amalgam fillings is explained by Dr. L. on a principle new to us. The report has him saying, "An amalgam 'sticks' because mercury is the best known agent for expelling air from the cavity." Is it then atmospheric pressure that keeps an amalgam filling in a tooth? We suppose that this is hardly the idea of Dr. L., but probably he believes that a stratum of air may prevent closeness and intimacy between other fillings and the walls of the cavities.

Near the close of the *Cincinnati Journal's* report of the meeting, we find the following, of personal interest:—

“ Dr. Rehwinkel offered a resolution that, in view of meritorious services, extending over many years, Dr. Geo. Watt be made an honorary member of this Society for life. This was voted on and carried. Dr. Watt responded : “ Mr. President and Gentlemen : I regret that I cannot express my thanks as I would like to do, for the honor and favor just conferred. I appreciate this Society and its favorable opinion more than I do that of all other societies put together, it is the first dental society to which I ever belonged, it is the oldest one in existence, and it has conferred all the honors it had to bestow, upon me, in times past, and I should be ungrateful indeed not to appreciate this additional token of your esteem.” Applause.

Now this may seem a little fullsome; but our earthly parents were old, and we esteemed them accordingly. Our Society Mother is now old, and we keep up the feeling; but the other societies which have honored us by membership and otherwise, must not be envious or jealous about this gush. We esteem and appreciate them too, far more than we can find words to express.

But we have not tried to name a tithe of the thoughts captured at the M. V. A. It made us feel young again to be with the good old Association. We hope the next meeting will be overwhelmed by the numbers in attendance. The officers and committees are working for a good meeting.

THE MISSION OF HUNGER.

Not less than a generation ago, Sir Thomas Watson, Physician to the Royal Family of Great Britain, when speaking of the increased longevity of the Anglo-Saxon race, expressed the opinion that no one thing had done so much to bring it about as the progressive development of dental surgery. Long life, he said, implied a good condition of the nutritive functions, and the dentists, by caring for and preserving the natural teeth, and by the insertion of artificial dentures serviceable in eating, had so prevented the overtaxing of the stomach, that the good results had proved greatly useful in preserving life. In accordance with this view, it follows that the better dentists understand these matters the higher they will estimate their vocation. And unless our calling is appreciated as it deserves, we are not likely to excel, or continue to make it more and more useful. The paper titled as above, discusses the process of nutrition in a pleasing and thorough manner, and in most excellent language, and hence we are glad to be able to lay it before the readers of the JOURNAL. Our first thought was to make copious extracts from it; but it would not divide, and all of it is profitable reading. We expect to read it over several times, and advise others to do so too.

Some parts of it will be better understood when it is known that it was primarily written for one of a series of lectures on medical subjects, to be delivered to the *Young Men's Christian Association.* At the earnest request of the members of the Academy of Medicine, it was read at one of our meetings, as a farewell paper from its author, as he was about changing his location, for the purpose of special practice on the eye, ear, etc., and this made it necessary for him to withdraw from active membership in the Academy. As he is not going far away, however, we hope to still have occasional articles from his pen.

We had been trying to shape a "special" on the nutritive functions as viewed from the standpoint of dentistry, but for the present, at least, we shall regard the paper of Dr. B. a fortunate substitute for it. Or rather, the idea is that the substitute, coming in just now, is fortunate for the readers who wish light on the subject.

DR. W. HART CAMERON.

AT a meeting of the dentists of Cincinnati, held June 8th, 1886, at the Ohio Dental College, the following resolutions on the death of Dr. W. Hart Cameron were unanimously adopted:

WHEREAS, By the sudden death by accident of Dr. W. Hart Cameron—eldest son of Dr. J. G. Cameron of this city, and a graduate of the Ohio Dental College—a member of, and former officer of the Mississippi Valley Dental Society—a former delegate to the American Dental Association;

WE, The assembled dentists of Cincinnati, recognize the loss of a friend, and of a promising young member of the profession; therefore

Resolved, That we tender our heartfelt sympathy to the bereaved family of the deceased; that copies of this resolution be sent to the daily city papers, and to the dental journals of Ohio.

Signed,
F. A. Hunter,
M. H. Fletcher,
H. A. Smith,
F. W. Sage,
Frank Bell,
A. Berry,
Committee.

A. G. Rose, *Pres't.*
C. M. Wright, *Sec'y.*

Societies.

"Wherewith one may edify another."

MEETINGS.

Minnesota State Dental Society, St. Paul, Wednesday, July 21, 1886.

Southern Dental Association, Nashville, Tenn., Tuesday, July 27, 1886.

American Dental Association, Niagara Falls, Tuesday, Aug. 3, 1886.

National Association of Dental Faculties, Wednesday, Aug. 4, 1886.

AMERICAN DENTAL ASSOCIATION.

The twenty-sixth annual meeting of the American Dental Association will be held at Niagara Falls, commencing at 10 A. M. on Tuesday, Aug. 3d, 1886.

Geo. H. Cushing, *Sec'y.*

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The annual meeting will be held at 11 A. M. on Monday, Aug. 2nd, 1886, at Niagara Falls. It is hoped all State Boards will be represented.

Geo. H. Cushing, *Sec'y.*

PENNSYLVANIA STATE DENTAL SOCIETY.

The 18th annual session will be held at Cresson Springs, July 27, 28 and 29th, 1886. Rates at the Mountain House $3 per day to delegates and their families. The Pennsylvania Central, Northern Central, and Philadelphia & Erie Railroads will sell special excursion tickets. Orders can be obtained from the undersigned, otherwise regular excursion rates will be charged. Other roads will sell at the usual excursion rates. Programmes and general information to be obtained from

W. H. Fundenberg, *Cor. Secretary*,
958 Penn Ave., Pittsburgh, Pa.

THE MINNESOTA STATE BOARD OF DENTAL EXAMINERS

Will meet in St. Paul at the Ryan Hotel, at 9 a. m. Friday, July 23d, (immediately after the session of the Minnesota State Dental Society.)

J. H. Martindale, *Secretary*,
414 Nicollet Ave., Minneapolis, Minn.

THE AMERICAN DENTAL ASSOCIATION.

The Committee of Arrangements had hoped to give full and definite information in the July journals, in regard to all the details of the arrangements for the annual meeting to be held at Niagara Falls, August 3d. But as the R. R. rates thus far have not been as satisfactory as the committee hope to secure and are working for, they will issue a circular to all members and to local societies as far as possible. Those who are not members of the Association and who wish the circular will please drop a postal to the undersigned to insure their getting it. The R. R. rates as thus far secured on all leading lines are one and a third fare round trip, to be issued upon presentation of certificate. Definite information concerning this will be given in the circular if better terms and arrangements are not secured.

The hotel rates will be as follows:—The International Hotel will receive dentists and their families at $3.00 per day. The Cataract at $4.00 per day. The Niagara, Prospect Park and Hotel Atlantique $2.00 per day if rooms are applied for and secured in advance. The Park Theatre adjoining the International Hotel has been secured as the place of meeting.

Do not be anxious about not receiving the circular. You will get it some time in July, but a few days delay in issuing the circular may mean a good deal of money saved in attending the meeting. For instance, the arrangements were not completed and circular issued until latter part of July, last year. A month earlier it would have been *impossible* to have gotten the low rates finally secured. Remember we *promise* nothing better than we now publish, but will continue to work for more favorable terms.

All State and local societies which have adopted substantially the Code of Ethics of the American Dental Association, should remember that they are entitled to one delegate for every five members. Such delegates must have credentials signed by the President and Secretary of the society which they represent.

J. N. Crouse,
Chairman of Committee of Arrangements.

2231 Prairie Ave., Chicago, Ill.

PENNSYLVANIA STATE DENTAL SOCIETY.

Eighteenth annual meeting, session, Tuesday, July 27th, 1886, at 10 o'clock A. M., continuing three days. Following is a list of the essays to be read and discussed:

1. Dr. Louis Jack, Philadelphia: Distinctions between the indications of hyperæsthesia and those of disturbances of the blood vessels of the dental pulp.
2. Dr. H. Leffmann, Philadelphia: Notes on Adulterations and Defective Preparation of Dental Materials.
3. Dr. W. B. Miller, Altoona: Duplex Spring, and other Matrices.
4. Dr. H. C. Register, Philadelphia: Compressed and warm air as a germicide, pain obtunder and otherwise useful agent in Dental practice.

5. Dr. E. H. Neall, Philadelphia: Review of the causes of the decline of Mechanical Dentistry.

6. Dr. S. E. Feltwell, Pittsburgh: Abscess and its Treatment.

7. Dr. C. S. Beck, Wilkesbarre: Incidents of Practice.

8. Dr. J. C. M. Hamilton, Tyrone: The Dental Pulp and its Treatment.

9. Dr. J. A. Todd, Titusville: Are we Improving?

10. Dr. S. B. Luckie, Chester: Cavity Lining.

11. Dr. L. Campbell, Slatington: Incidents of Practice.

12. Dr. W. E. Van Orsdel, Mercer: All Sorts of Questions from Practice.

13. Dr. R. B. Cummins, Blairsville: A Study in Dentistry.

14. Dr. E. C. Blackburn, Hollidaysburg: Incidents of Practice.

The examining board will be prepared to meet candidates for examination, and sign diplomas.

IOWA STATE DENTAL SOCIETY.

The twenty-fourth annual meeting of the Iowa State Dental Society was held in Iowa City, May 4–7. There was a large attendance and a very interesting session. The membership now numbers 113. The following are the officers for the ensuing year: *President*, L. E. Rogers, Ottumwa; *Vice-President*, W. H. Baird, Burlington; *Secretary*, J. B. Monfort, Fairfield; *Treasurer*, J. S. Kulp, Muscatine. Cedar Rapids was chosen as the place of our next meeting, the first Tuesday in May, 1887.

J. B. Monfort, *Sec'y.*

CHICAGO DENTAL SOCIETY.

PROGRAMME OF SCIENTIFIC WORK, FOR THE YEARS 1886–7–8–9.

1886.

May. L. L. Davis.—"Equus." The Horse—his Teeth and their Diseases.

June. Louis Ottofy, C. N. Johnson.—Etiology of Dental Caries.

July. D. M. Cattell.—Removal of Salivary Deposits. B. D. Wikoff.—Dentifrices.
Oct. B. L. Rhein.—Preparation of Cavities. G. S. Salomon.—Mallets and Malleting.
Nov. G. D. Sitherwood.—Non-Cohesive Gold. H. A. Costner.—Cohesive Gold. C. R. Baker.—Gold and Platinum.
Dec. C. H. Wachter.—Oxyphosphates and Oxychlorides. W. G. Stowell.—Gutta Perchas and their uses.

1887.
Jan. Edmund Noyes.—Periodical Literature. C. R. E. Koch.—Books published since 1870. (Critical Review.)
Feb. Garrett Newkirk, E. S. Talbot —Irregularities of Teeth.
Mar. J. A. Swasey.—Retention of Dentures. W. B. Smith.—Metal and Mineral Bases.
April. T. B. Wheeler.—Separators and Matrices. (Annual Meeting.)
May. C. H. Thayer.—Treatment of Living Pulps. Geo. H. Cushing.—Pulpless Teeth and their Treatment.
June. W. W. Allport.—Pyorrhœa Alveolaris. E. L. Guffin.—Electro-Therapeutics.
July. James G. Reid.—Bacteria and Bacteriology. L. L. Davis.—The Microscope in Dentistry.
Oct. C. F. Matteson.—Gold and Tin. C. P. Pruyn.—Amalgams and Alloys.
Nov. A. W. Harlan.—Oils. James Stewart.—Resins and Oleo-Resins.
Dec. G. V. Black.—Palato-Plasty. E. L. Graves.—Artificial Vela and Obturators.

1888.
Jan. E. H. Hamilton.—Bridge-work. A. E. Matteson.—Artificial Crowns.
Feb. G. A. Christmann.—Caries and Necrosis of Maxillary Bones. A. E. Baldwin.—Tumors of the Mouth and Jaws.
Mar. Edgar D. Swain.—Embryology. J. W. Wassall.—The Problem of an Edentulous Race.
April. C. F. Hartt.—Steel—its History and Uses. (Annual Meeting.)
May. P. J. Kester.—Antiseptics and Germicides. J. E. Hinkins.—Disinfectants and Deodorants.

June.	T. W. Brophy.—Plastic Oral Surgery. W. J. Martin.—Fractures of the Jaws.
July.	Louis Ottofy.—Dental Records and Book-keeping. J. N. Crouse.—Fees.
Oct.	A. E. Brown.—Bleaching Teeth. W. B. Ames.—Compressed, Heated and Dried Air in Dental Surgery.
Nov.	G. W. Whitefield.—Motors—Electric, Gas and Water. E. M. S. Fernandez.—Blow-Pipes and Soldering.
Dec.	W. W. Lazear.—Anesthetics. W. W. Curtis.—Extracting Teeth. A. J. Nichols.—Hemorrhage.
1889.	
Jan.	I. A. Freeman.—Destroying and Removing the Pulp, B. L. Rhein.—Filling Roots.
Feb.	G. W. Nichols. — Treatment of Teeth for Pregnant Women. J. H. Woolley.—The First Permanent Molar.
Mar.	J. F. Austin.—Tin in Operative Dentistry. C. A. Kitchen. —Treatment of Deciduous Teeth.
April.	W. A. Stevens.—Tic-Douloureux. (Annual Meeting.)
May.	M. Stout.—Dentistry in the Far East. J. S. Burlingham. —Pre-Historic Dentistry.
June.	E. C. Timerman.—Pain Obtunders. A. W. Harlan.—New Remedies.
July.	G. S. Salomon.—Inflammation. Nels Nelson.—Anti-Pyretics.
Oct.	B. S. Palmer.—Fermentation. E. A. Royce.—Putrefaction.
Nov.	G. H. Bentley.—Alveolar Abscess. A. B. Clark.—Diseases of the Gums.
Dec.	D. B. Freeman.—The effects of Eruptive Diseases on the Teeth. W. E. Hall.—Syphilis and Syphilitic Teeth.

DELEGATES TO AMERICAN DENTAL ASSOCIATION

FROM MISSISSIPPI VALLEY ASSOCIATION.

Chas. Welch, J. R. Callahan, W. D. Kempton, N. S. Hoff, H. A. Beamer, C. M. Wright, E. G. Betty, J. W. Jay, F. W. Sage, C. I. Keely, A. G. Rose, H. L. Moore, A. T. Goode, M. H. Fletcher.

To the Members of and Delcgates to the American Dental Association and all Dentists:

The undersigned has suceeded in making arrangements with the Trans-Continental and other lines of railway so that, although the meeting of the Association is to be held at Niagara, (its Executive Committee having instructed the Chairman to call it there in the interest of harmony,) the profession will still be able to avail themselves of the privilege of a visit to the Pacific Coast at the low rates given to the Grand Army. An extension of the time for arriving at San Francisco has been granted so that all desiring to attend the meeting at Niagara can do so and then have until August 17th to reach the Pacific Coast. Tickets will have to be purchased during the month of July, previous to the 25th, but will be good going from July 3d to arrive at San Francisco on or before August 17th and good to return for 85 days from August 3d. Certificates and information will be supplied upon application to

A. M. DUDLEY,
Salem, Mass.

Books and Pamphlets.

SOUVENIR OF THE NEW YORK ODONTOLOGICAL SOCIETY annual dinner, 1886.

ON THE LIMITATION OF THE CONTAGIOUS STAGE OF SYPHILIS, especially in its relation to marriage. By F. N. OTIS, M.D. Reprinted from the *Journal of Cutaneous and Venereal Diseases.* 1886.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Philadelphia, 37th annual announcement, 1886.

OHIO COLLEGE OF DENTAL SURGERY, Cincinnati, 41st annual announcement 1886–7.

DIRECTORY of the Practicing Dentists in the State of Alabama, 3d edition, March 1st, 1886. By T. M. ALLEN, D. D. S., Eufaula, Ala.

CALENDAR OF THE UNIVERSITY OF MICHIGAN for 1885–86. Ann Arbor, 1886.

TRANSACTIONS OF THE CALIFORNIA STATE ODONTOLOGICAL SOCIETY 1884 and 1885. San Francisco, 1886. 237 pages.

WISCONSIN STATE BOARD OF DENTAL EXAMINERS. First annual report, Sept. 30, 1885.

IOWA BOARD OF DENTAL EXAMINERS. Third annual report for the year 1885.

UNIVERSITY OF MARYLAND. Annual Catalogue Dental Department, Baltimore.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY, Philadelphia, 31st annual announcement.

Our Aftermath.

HOW CLINICIANS ARE TRAPPED.—A curious phase in pharmaceutical history is the alterations which from time to time occur in drugs without change of the commercial name. It is a very odd commentary upon surgical therapeutics that, in the course of one or two decades, an entirely different drug should be substituted for the old pareira brava without the surgeons ever suspecting the alteration. A similar substitution occurred in the case of creosote. As the products of coal tar became cheaper and cheaper, carbolic acid little by little replaced creosote, so that there was a time when there was no creosote at all in the market, the article which was everywhere sold under such name being nothing more or less than impure carbolic acid. Finally, some astute observer discovered the substitution, and pointed out that the two products could be readily distinguished one from the other by their odor, creosote having the peculiar smell of smoke. This led to the discovery by many dentists of the great superiority of creosote over carbolic acid as a nerve-obtunder. So long, however, as these gentlemen were not told of the differences of the drugs they never detected the substitution by their clinical results. In regard to pareira brava, it would probably be a shrewd guess if we would consider that the activity of the decoction depends upon the water which is present, and that, as the surgeons use the same water with the roots of Cissampelos pareira and Chondodendron tomentosum, the effect was identical with those, or, in other words, that the water is the most potent part of the two decoctions. Creosote and carbolic acid are undoubtedly very active agents, but their physiological activity seems to run in identical channels.—*Therapeutic Gazette.*

IRIDIUM.—Iridium is a metal which is likely to have a much more extensive employment than it now enjoys. Hitherto it has been chiefly used in alloy with osmium for tipping gold pens. But an American pen manufacturer has discovered that by fusing the metal at a white heat and adding phosphorus perfect fusion could be obtained, with all the hardness in the resulting material of the iridium itself. For mechanical applications this combination is exceedingly useful, as in the case of pen points; and its adaptability is being proved in many ways. Agate, which has hitherto been employed for fine chemical balances, is now giving place to iridium, which takes a finer edge and is not so liable to catch or break.

Hypodermic needles for surgical use are now made of gold and tipped with the iridium compound, which is not subject to corrosion like the old steel points, and it is also being largely applied to instruments for surveyors and engineers and to electrical apparatus. Iridium can be obtained somewhat abundantly from the Russian platinum mines in the Ural, and it is found in combination with gold in California. Mr. Dudley, of California, is engaged on experiments with the object of plating vessels with iridium, and as the metal resists the action of acids, it is likely that such vessels will be very useful in many chemical operations.—*Chem. and Drug.*

Graduates of American Dental Schools Practicing in Germany.—The different colleges are represented as follows in *Petermann's Almanac*, 1885:

Pennsylvania Dental College,	40
Philadelphia " "	38
Baltimore " "	19
New York " "	15
University of Pennsylvania, Dental Department,	5
Ohio College,	4
Boston "	4
Harvard University, Dental Department,	2
University of Maryland, " "	2
" " Michigan, " "	1
Western College of Dental Surgeons,	1
Total,	131

Hemostatic Powder.—Professor Bonafoux, at a recent meeting of the Academy of Medicine, at Paris, read a paper upon a powder which possesses great hemostatic powers, and is capable, it is said, of arresting the bleeding of large arteries, so that it will prove serviceable in important surgical operations. The powder is prepared by mixing equal parts of colophony, carbon, and gum arabic.—*Medical and Surgical Reporter.*

Gold and Silver Plated Teeth.—A steer was killed by a Virginia City butcher the other day whose teeth, the Enterprise says, were completely incrusted with gold and silver bullion. The animal came from a ranch on Carson River, and it is thought the metal accumulated on his teeth while he was drinking the river water, which is impregnated with the tailings from the mills reducing Comstock ores.

Could get along without Him.—Some one has said that the man who is curious to see how the world could get along without him can find out by sticking a cambric needle into a millpond, and then withdrawing it and looking at the hole.

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

Vol. VI. AUGUST 1, 1886. No. 8.

Contributions.

"A word fitly spoken is like apples of gold."—Solomon.

A CASE IN PRACTICE.

BY GEORGE W. KEELY, D.D.S., OXFORD, O.

On the seventh of July, 1885, my attention was called to the following case of a girl aged *fourteen years:*

Her father and mother have normal arches; and so far as I could learn, this deformity appeared only to a moderate degree, in the superior teeth of one of her aunts. In this patient both arches were unusually well developed; the teeth strong and firm, all the posterior ones antagonized perfectly; all the inferior ones being in perfect line. The deformity appeared in the *prominence* of the six superior anterior teeth. Thumb-sucking was indicated as the cause of this unusual prominence, but I was assured by the mother that she had never been addicted to this prolific cause of such deformity. Unfortunately she had a short upper lip, and in conversation she would expose the six anterior teeth, and the fourth of an inch of her gum, and *could not* use her *upper lip* in articulating words. She could cover these teeth only by drawing her lip down with her fingers. From the cutting edge of the superior incisors to the inferior, it was just *one-half inch*, one-fourth from the laterals, and one-eighth from the cuspids.

This deformity was very mortifying to a Miss just budding into womanhood, and the more so, from the fact that some of her thoughtless companions would frequently imitate her effort in conversation, which had a tendency to make her irritable and seriously affect an otherwise amiable disposition. On the day mentioned at the beginning of this article the following model was taken.

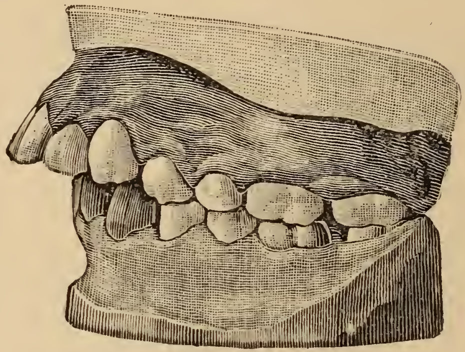

Fig. 1.

In this case the extraction of the first superior bicuspids was absolutely indicated, to make the necessary space to draw the cuspids back, and the incisors into line. The first apparatus used after the removal of the bicuspids, was a vulcanite plate, covering the roof of the mouth, and all the posterior teeth, with a grinding surface on the plate, raising the bite about one-eighth of an inch. This was perfectly fitted over the teeth, and made quite firm, (very similar to the plate described in the March No. of the Journal, to move a lateral out of lock). We first separated the laterals and cuspids, as also the centrals, by drawing a piece of rubber between them, to make the necessary space to adjust around the cuspids, a very thin band of platinum, and secured in position with insoluble cement. (For this useful contrivance we are indebted to Dr. W. N. Morrison, of St. Louis.) Then we fitted a band of the same metal to the incisors, with hooks to go over the cutting edges of the centrals, and a hook passing between the centrals; or in other words a T arrangement. In the centre of the plate a pin from an artificial tooth was fastened, and also four others both inside and out, opposite the first molars. To these we attached a strong rubber band, on each side, drawing them firmly and securing them to the bands on the cuspids. Then the T was put in place, and a band drawn from the centre to the hook on the T. Smaller bands were also carried from the inside pins to the hook. In this way we had three bands operating on the T to draw the incisors back, and at times doubled the power on the cuspids. The plate was cut away back of the incisors so as to wholly relieve all pressure on the parts in that region. This apparatus was worn for about two months, but removed and cleansed almost daily, and the patient required to cleanse her teeth. The bands around the cuspids of course, were allowed to remain until their mission was accomplished.

At the end of two months a new plate was made, leaving ample space, so the incisors could be drawn back and into line.

The next apparatus used is like the one described by Prof. Norman W. Kingsley, as seen in his excellent work on "Oral Deformities," page 134. This is shown in

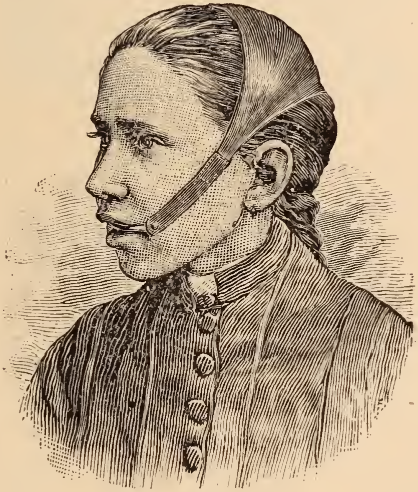

Fig. 2.

A perfect impression was taken of the six refractory teeth, and a vulcanized cap made on the model. The cutting edges fitting in the cap, arms an inch long extend out at each corner of the mouth. The skull cap was made of leather and strong rubber bands attached to it, the cap over the teeth adjusted and the bands drawn down and hooked on the arms. This apparatus finished the work of drawing the teeth in line, and at the same time forced them up into their sockets nearly one-eighth of an inch. At the end of four months she was dismissed, but required to adjust the skull-cap arrangement at nights for about six months. She had no trouble in adjusting or removing it, and she seldom removed the rubber bands from the cap. She would simply draw the cap down and remove it, and re-adjust in the same way.

The improvement in her personal appearance, and enunciation is simply wonderful. Cut No. 3 shows the antagonism of her teeth as they now appear.

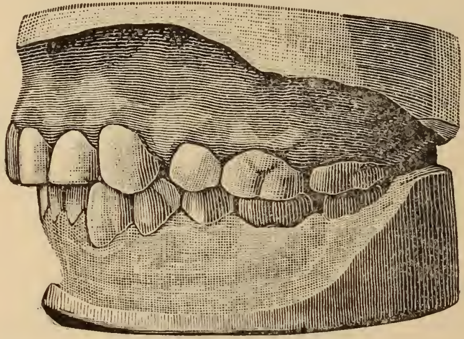

Fig. 3.

The process in front is flattened, and in ordinary conversation she does not expose more than half the length of the teeth. Our instructions are to frequently close the mouth and press the lip down with the thumb and finger to expand the muscles. To guard against the possibility of these teeth going astray again, platinum clasps were fitted to the second bicuspids, and a thin platinum band fitted over the teeth, and attached to the clasps, to be worn occasionally at night. Our patient fully realizes what has been done for her, and we have no fears of her neglecting our instructions in any particular. She proved a heroic patient during the operation, and had there been a failure, it certainly would not have been from any fault of hers. We were assisted during this tedious operation by our partner, Dr. O. A. Beeks.

The London *Lancet* says that "if a man can keep his teeth until after middle age he may generally count on keeping them to the end of his life."

AMMONIA.

BY GEO. WATT.

This alkali has its uses in chemistry and in the arts, as well as in physiology and therapeutics. It has also some singular, if not curious traits, and as it is but partially understood in any of these aspects, it may be profitable to devote a little time to its discussion. Before we are done with the subject the reader will possibly conclude that our action is impelled by the same principle that guided a distinguished writer who when asked his opinion about a certain subject replied, I know nothing about that, I must write a book on it.

But the discussion of ammonia in a dental periodical will appear quite appropriate if we bear in mind that much of our most annoying practice results from the direct action of this agent; and that, in many cases, our patients lose teeth and health, if not life, by morbid conditions in which it is the leading factor.

On account of its strong affinities as an alkali, and from the fact that when it is formed or liberated, several acids are likely to be formed or liberated with it, it is not often found free, or uncombined. Perhaps its carbonate is its most common salt, and this is not strange; for there is ammonia formed by the process of putrefaction, generally if not always, and at the same time, and under the same circumstances, carbonic acid is formed, and as they are in contact and active, (in the nascent stage,) of course they combine, the one being an acid and the other an alkali.

And just here it may be well to notice a serious misapprehension, which results in confounding the therapeutic uses of the alkali and its carbonate. It is well known that the carbonate retains the pungent odor of free ammonia. And it is quite as well known that the inhalation of ammonia gives relief in faintness, or incipient syncope. Ammonia is ordinarily a gas; but for practical uses the gas is dissolved in water, thus constituting the well known *aqua ammonia.* This fluid is very pungent, and being a liquid it is inconvenient, inasmuch as the patient or nurse is likely to spill it. This is quite objectionable often, on account of its damaging or destroying the colors of the goods on which it is spilled. The popular notion seems to be that, in relieving faintness, the pungency of the alkali acts as a stimulant on the terminal loops of the olfactory nerves, and by reflex action, or by sympathy, the whole nervous system is aroused. And believing this, and finding the carbonate but little, if at all milder as to pungency, and it being much more convenient to handle and carry than the liquid described above, the carbonate is confidently substituted, and indeed, is almost universally used for the purpose under consideration. Often we have seen physicians fall into this mistake, and have seen them much surprised when it was pointed out to them.

But a few clear thoughts about the nature of the function of respiration will demonstrate to any one that the alkali, and not its carbonate, is the proper thing to use to relieve faintness. It is well known that carbonic acid is given off by respiration. The expiration is loaded with it. In the incipient stage of syncope, referred to, the residual air remaining in the air cells is accordingly heavily charged with this acid, which is a gas, and liable, on the principles of gaseous diffusion, to pass back, through the mucous membrane, into the blood. But as it is a deadly poison when respired, it thus does great mischief, and is the real cause of the faintness. To relieve the patient, it must be removed in some way, and to remove it mechanically, or to change its chemical nature, so as to destroy its deleterious power, is the proper treatment.

A free, full and rapid breathing of atmospheric air gives full relief; but sometimes the syncope is so complete that this is beyond the power of the patient, and then the poison is to be rendered inert or harmless by decomposition, or by a combination resulting in a harmless compound. Ammonia, which is a true gas, and which readily escapes from *aqua ammonia*, fulfills nicely the latter condition. The two gases, one an acid and the other an alkali, combine almost instantaneously, and the carbonate of ammonia is formed, a salt very readily dissolved in the watery portions of the blood and mucus, adherent to the lining membrane of the air-cells, and in this way the bulk of the two gases is reduced to almost nothing, though before the combination, the cells are painfully full of the carbonic acid. The air cells being thus freed from the abnormal distension, are at once restored to their function, respiration resumes its normal state, and the faintness is quite gone.

But if instead of ammonia, the patient is made to inhale the carbonate, what can be gained? The ammonia is already saturated by carbonic acid, and can take no more, hence the objectionable acid poison remains in the air cells, continuing its mischievous results.

It may be we are too minute in this discussion, but if so we ask pardon from the reader already enlightened, on the ground that so many yet fail to understand the matter, as is proved by the almost constant misapplication of the remedies, that there must have been hitherto, a lack of plain teaching.

It may be well, too, before leaving this part of the subject, to notice that, in relieving the faintness referred to, it is not essential to have the patient breath through the nose. We have seen both physicians and nurses incommode both themselves and their patients by forcing the remedy through the nose. This is often irritating and annoying, especially with children. We suppose it is done through want of thought, or from an opinion that the relief is gained by stimulating the olfactory nerves. A little patient will often take ammonia quietly through the mouth, when a considerable amount of force would be required to have it inhaled through the nostrils.

But the question is asked as to getting good results from inhaling ammonia when the syncope is complete. Of course the patient is breathing very feebly then, if at all; but still the medicine can be introduced by the aid of artificial respiration. Let the chest and abdomen be firmly compressed, and the pressure suddenly relaxed, and the natural elasticity of the parts will insure an inhalation. In this way the air cells can be rapidly purified.

As already stated, ammonia is one of the results of putrefaction. Its presence is proof of the progressive execution of the dread sentence, "Dust thou art; and unto dust shalt thou return." The presence of this substance in a living body,—in a body alive and containing nitrogen—is a reminder that death has occurred to the extent, or in the ratio of its presence. Its presence is, in part, an explanation of the offensive odors pertaining to the putrefaction of dead carcasses. Two other bad smelling gases are given off in this process; and as they are both acids, they combine readily and rapidly with this alkali. Any one of the three gases named is offensive enough for all practical purposes. But with sulphuretted hydrogen, called hydrosulphuric acid, ammonia forms a salt possessing an odor far more offensive than are all three of the gases uncombined. And even this is far surpassed by a combination with phosphuretted hydrogen. This salt has been called "the double distilled quintessence of stink, rectified and condensed." Yet with even such a reputation it has been known to taint the breath of beauty and youth.

The above results of putretaction may sometimes be found in the mouth as a result of the putrefaction of portions of lean meats or other nitrogenous foods, when the patients might be aptly described by the words of inspiration, "Their throat is an open sepulcher."

But they may be found in such conditions from causes more general. When through an excessive and prolonged use of highly salted foods, with abstinence from fresh vegetables and other antiscorbutic articles of diet, an unhealthy state is brought about, short of actual scurvy, perhaps, but not very far short of it; and an excess of ammonia is apt to be found in the secretions and the excretions, and when abnormally found, let it be borne in mind that the patient is dead, to the extent of "the find."

When present in the buccal fluids it renders them unable to hold the lime salts in solution, by combining with the free carbonic acid dissolved in them. These lime salts are kept dissolved in the saliva by the free carbonic acid there, just as similar salts are held in solution in hard water, by the presence of a surplus supply of the same acid. When the acid has united with the ammonia, or any other base, it can give no aid in dissolving lime salts. To do this it must be free.

When no longer held in solution the lime salts are precipitated, and are found on the teeth, artificial plates, etc., in the form of salivary calculus, or tartar. And it is scarcely worth while to remove the tartar, and polish the teeth till the conditions causing its precipitation are corrected. Yet, for sake of cleanliness and decency the mouth ought to be cleansed often, with the distinct understanding however, that such cleansing must be only temporary. A young lady who would neglect to wash her face because it would soon need a similar cleansing, would scarcely be accounted as kissable, unless by her doting mother. Yet in the condition of deposited tartar, with putrefying liquids saturating its pores, the teeth and gums are dirty beyond endurance, yet the patient's own lips are constantly kissing them. By thinking of this, almost any young lady can be induced to carefully wash her mouth after taking her daily food. Taking into consideration that ammonia has precipitated the tartar, and that the two other offensive gases named above, are generally, if not always present, there is no difficulty in explaining the fetid odor emanating from such a patient's mouth.

Soon after the precipitation of tartar, as described, if not before, the gums become swollen and spongy, with increased redness. Often a touch will cause them to bleed freely. In a case like this, a careful removal of the tartar, followed by diligent brushing, accompanied by a stimulating and astringent dentrifice, alternated with persevering friction and pressure by the patient's fingers, a cure is effected by a single prescription; and it is from cases like this that we so often hear of a cure of *pyorrhea alveolaris* by a single application. On the same principle, and in like manner, a cancer-quack cauterizes a wart, and reports a cure of *schirrus;* or an ignoramus calls himself an "Ingen Rute Docter," and doses a hysterical woman or a drunken man with chick-weed tea, and claims to have cured hydrophobia.

Taking the affinities of ammonia into consideration, we can the more readily understand its power for evil when abnormally present in the system, or in any part of it. Bear in mind that it is an alkali. It may appear in contact with a secretion that, normally, is an acid. Of course derangement of function must result. And this is equally true if the normal state of the secretion is neutral. An alkaline reaction must be objectionable to an organ calling for neutrality. Besides, the alkali may form with some acid a salt quite undesirable.

It is quite important for the practitioner to recognize the symptoms of the approach of ammoniacal degeneration. The experienced eye will generally detect it in the changed appearance of the patient. But some general guides should be given. The odor of the breath gives plain indications; but if we take the odor of *aqua ammonia* as our guide, we will be led astray. The ammonia escaping from putrefying matter is always commingled, and nearly always combined with other kinds of matter. We have before alluded to the presence of sulphuretted and phosphuretted hydrogen. Hence, when we find the breath, or the perspiration of the patient suggestive of putrefaction, the condition of ammoniacal degeneration has been reached; and there is danger of the patient declining in health, unless promptly relieved. Believing the theory of acids being active exciting agents of dental caries, the careful young dentist, finding a patient in the condition above described, may test the buccal fluids with litmus, and find an alkaline reaction. He at once rests content with the thought that this patient has no tendency to caries. A greater mistake could hardly be made; for this condition is a precursor of an attack of white decay.

Ordinarily in this state the buccal fluids become adhesive, and penetrating like oil or glue. Professor Taft used to describe the state by calling the saliva *ropy*. In such state it is difficult for even a boy to "spit beyond his beard." Those who practiced before the days of rubber dam will recollect this condition of the fluids, as it was almost impossible to keep a cavity dry while filling.

Remember that this condition tends, locally, to white decay, and to the deposit of tartar; while constitutionally, the tendency is toward general prostration and debility. We are satisfied that we have seen a few cases prove fatal to the patients, who apparently died of indigestion and blood poisoning.

Of course, where there is disease there should be remedy. The treatment of this condition is very important; but it seems to be plainly indicated, and well marked out after a correct knowledge of its etiology and diagnosis. Water is the remedy for thirst; and it is specific, and the only remedy. Manure is the remedy for exhausted lands. Acids neutralize alkalies. Antiseptics prevent putrefactive fermentation. Disinfectants destroy offensive odors resulting from the putrefactive processes; and, on the basis of these general statements, it should not be difficult to lay out a line of treatment. In doing it, however, we shall probably repeat ideas which we have put into the JOURNAL in previous articles. But we shall not let this deter us; for, with all that we have said in the past, in reference to ammonia, we find only a few who understand our position as to its influence in the promotion of oral and dental diseases. And failing here they as generally fail in understanding or appreciating our line of treatment. We have found it necessary in gaining recognition for new ideas, and all the more when they run counter to old recognized beliefs, to follow the directions of the poetical prophet who says that "Precept must be upon precept, precept upon precept; line upon line, line upon line; here a little, and there a little."

Careful thought would always suggest, in ammoniacal degeneration, the toning up of the system, and the neutralization of the chemical poisons. It is doubtful if any salt of ammonia likely to be developed by treatment can be as deleterious in the blood as the alkali itself. Hence any ordinary acid is likely to be of use as a neutralizer. Sour fruits, digestible pickles, etc., are indicated. Lemons, the various berries, grapes, currants, etc., suggest themselves. Of course these are not to be taken at random, but with the regular meals. These vegetable acids may be indulged in according to the taste and inclinations of the patients, provided they incline to take them. Aromatic sulphuric acid, called elixir vitriol, is an excellent medicine; and as the liver is generally torpid in the conditions under consideration, it is often the best acid we can use, as it stimulates the biliary secretion. Dilute sulphuric acid is an officinal preparation, and has the same strength, and may be substituted for the elixir. Or if preferred, dilute nitric acid may be used.

When the liver is acting properly, and digestion is reasonably good we usually rely on acetic acid—good vinegar diluted with water, and sweetened to suit the taste.

And right here it may be not amiss to mention that the popular notion is that the teeth are injured, or often destroyed by the medicines used during a spell of sickness; and some decline to employ regular physicians, and run after the most ignorant pretenders, believing that the quack doesn't use strong medicines, and hence will not do injury to the teeth. It is the duty of dentists to teach their patrons, when opportunity offers, that in nearly all cases, the damage is done, if at all, by the disease. Typhoid and scarlet fevers are very hard on the dental organs, and they generally leave the teeth in a bad condition even if no medicine is taken. The so-called mineral acids, tincture of iron, etc., may injure the teeth by direct contact, when used as medicines, but they do not establish, or directly cause caries. They corrode the surface, so as to afford a lodgment for adhesive matter in the food, and it may ferment in contact with the teeth, and thus cause further corrosion. But this is not caries; and if the chemico-vital theory of decay is correct, the acids acting directly are in the nascent, or active state.

The victims of ammoniacal degeneration may suffer, at the same time, from other morbid conditions, when, of course, these must be eradicated if curable. It may be necessary, in the present state of our profession, to call in the assistance of a physician. And let there be no jealousy on the part of either, to interfere with the best interests of the patient. Professional manliness should rise above all such small things.

But it seems hardly necessary to multiply words here. A goodly number of our profession have given their views in regard to the treatment of the conditions under discussion, in some cases using quite different terms to designate them. But where the practitioner has the back volumes of any of our leading periodicals, he can find instruction by reading thoughts written years ago.

THREE METHODS OF PROSTHESIS.

BY DR. STEWART J. SPENCE, SAN FRANCISCO, CAL.

During the development of the pivot and bridge-work system of dental prosthesis, every progressive dentist must feel interested in anything tending to shed light upon the subject, for we are beginning to realize that it is forcing itself upon us with the energy of a young giant. The time ought to have been long passed when a dentist could be found so antiquated as to fill a patient's mouth with several square inches of rubber for the sake of sustaining one small tooth.

There may not be anything of great value, perhaps there is not anything essentially new, in the three methods of placing a single artificial tooth in the dental arch which are here recorded, but they are offered as a small contribution to the great subject.

1st. When approximal decay in a molar has proceeded so far as to encroach extensively upon the buccal surface it is evident that a filling would in many cases be objectionably conspicuous, to obviate which the following method may be used: A plain gold or vulcanite plate bicuspid tooth may be chosen, and ground down on one side to about two-thirds its original size, this ground edge being fitted to a similarly ground edge of the natural molar, the joint formed by the union of the two running down the centre of the buccal surface of the molar, and resembling the depression usually found there. To this artificial bicuspid should be soldered a bar of platino-iridium, the free end of which should enter the pulp chamber and anchor in oxyphosphate (for the nerve is usually dead where decay is so extensive), or in case of a live nerve, should pass horizontally along in a groove made for it in the remaining portion of the crown of the tooth. A little gutta-percha should seal the joint, and the rest of the cavity may then be filled by amalgam. This operation presents a contour amalgam filling, supplemented by a porcelain corner to give beauty to it. The principle is by no means confined to the molars.

2nd. The second method under consideration is one by which a lost canine or bicuspid may be restored by supporting it by an adjoining bicuspid or molar. A gold plate canine tooth being chosen and backed, a bar of platino-iridium is soldered crossways to the backing, one end of this bar entering a cavity in an approximal tooth and the other left free, but made to touch the neighboring tooth, so as to offer resistance to an outwardly directed force, while a slight over-lapping of the tooth will offer similar resistance to a force directed inwards, and thus the tooth in which is fastened the other end of the bar is relieved from the strain on it (increased by leverage) which might loosen the bar in the filling if the piece depended entirely for support on the fastened end. The object of leaving one end free is to readily permit of floss silk being run under and around the tooth and the filling which retains it. If it be objected that there is an element of weakness here, let it be remembered that as it is a canine tooth that is being used to replace a bicuspid there will be but little occlusion, and the cusp may be left somewhat shorter than its neighbors, thus lessening the danger from occlusion. The bar should be held in by a gold filling, the floor of the cavity being first filled, the bar is then rested upon this first layer of gold, and the tooth held against the gum by digital pressure until a few more pieces of gold retains it there while the filling is being completed. That part of the bar entering the cavity must be serrated, and wedge-shaped, with the cutting edge of the wedge pointing out of the cavity. This shape favors impaction of the gold and also makes anchorage.

3rd. The third method refers to the incisors, where one is lost and the root gone. An impression is taken, and a model obtained of the space and adjoining teeth; a gold plate tooth, sufficiently wide to slightly overlap on both sides, is backed, and adjusted to model and a die made, on which gold plate is swaged to cover about two-thirds of the palatal surface of each adjoining tooth, and a little of the gums, also to fit the backing of the artificial tooth. If at this stage the tooth and backing were soldered together it would be seen that an appliance is made which would hold with great firmness to its place between the natural teeth; but this firmness would only last till it had moved these teeth out of their positions; and therefore while this general shape of the appliance is used to give resistance to any forces pressing upwards or outwards or inwards, something else is needed to prevent it falling downwards. In preference to permanently pivoting it on by pins passing through the backings and into the natural teeth, I pass two narrow clasps of thin spring gold a short distance around in front of the teeth, and up under the gum if possible. This appliance can be removed for cleansing. It is much stronger and steadier than a kindred device which is retained in place merely by ordinary clasps.

Correspondence.

"I charge you that this epistle be read."

PARAFFINE FOR ROOT FILLING.

Editor Journal:—*Dear Sir*—Having for two years used paraffine exclusively for filling the roots of lower teeth, I ask brief space to speak of its merits and mode of insertion.

When the root is ready to fill, dry it thoroughly and warm it well with the hot air syringe. Take a small piece of paraffine and place directly over the canal and melt with a hot burnisher, and the paraffine will instantly sink to the bottom of the root completely filling it but producing no pressure and consequently no irritation. If gold is to be inserted a layer of gutta percha or some of the cements should cover the paraffine, after which fill in the ordinary way. The advantages of paraffiine are that it fills the root *full* without producing pressure and consequent irritation, and any portion of the pulp which may possibly remain becomes securely invested and no decomposition can possibly occur. It is as completely mumified as if saturated with carbolic acid and that too without the slightest danger of irritating the surrounding tissues, which always exists where carbolic acid or its equivalents are used. In two years of this practice I have had better success than with any other method I have tried, and in twenty-five years I have tried nearly all, and with this method the time and pain are reduced to a minimum and success is almost absolutely certain. The pulp chamber is filled completely with a perfectly non-irritant substance, and if the work before and after is well done success should be certain. To fill the roots of upper teeth, cotton or some similar substance must be used as a vehicle to convey the melted paraffine to its destination, and of course the root plugger must always be warm enough to melt the paraffine. Of course no paraffine should be allowed to remain outside the root canal as it is for the root alone that it is adapted. I think a short trial with this substance will convince any one of its superiority over any other method now known, as with this nearly all subsequent irritation is avoided.

J. H. Warner, D.D.S.

Columbus, O., July 10th, 1886.

Compilations.

"Gather up the Fragments."

BACTERIOLOGY AND THE GERM THEORY OF DISEASE.

BY JOSEPH EICHBERG, M.D., CINCINNATI, O.

[Read before the Cincinnati Medical Society.]

"Natura in minimis maxime miranda"—"Nature is most wonderful in the least of her creations." Truly no more fitting motto could herald the introduction to a subject which has of late seemed to grow in directly inverse ratio to the size of the objects it considers, and which leaves us to-day, after the accumulated evidence of centuries of observation and of painstaking work, just within the vestibule of a science with illimitable vista and bound-less possibilities. Hinted at for many years by those whose genius or study lifted them above the plane of their scientific colleagues, it was met by ridicule, scorn and derision, rather than by argument and reason. Facts and theories were alike discarded as being totally unworthy of consideration, much less of belief, and the advanced skepticism of the day did not allow its votaries to entertain the possible truth of a doctrine which seemed, on the face of it, to have so little in its favor.

That the process of evolution, after having through many, many ages continued its undeviating, harmonious action for the highest development of its primitive forms, should have resulted in such an example of perfection as the human body, with its manifold wonders of mechanism and tissue change, was to the scientific mind evidence of the potency of a divine and simple law; but, until within the last few years, these same minds were not prepared to see the completion of that law in the return of the body to its inorganic elements through the restless activity of bodies whose dimensions are almost less than microscopic, and whose organism presents a simplicity of structure which ranks them with the lowest types either of animal or vegetable life.

To us, as physicians, the subject possesses an interest greater by far than the love with which every student of nature follows the new revelations of her mysterious processes. The medicine of the future, as has been well and wisely said, shall find its proper study in the prevention rather than the cure of disease, and we cannot remain indifferent to a study whose aim it is to show that many of the most disastrous morbid processes are so intimately associated with the growth of microscopic life, that we are as yet uncertain of the exact relation between the two. We are not in position to deny that the germ is the cause of disease, but we are not more able to absolutely prove such causal connection, and the most that has been gained for the present is the proof of the frequent, in some cases, constant, coexistence of microscopic organism, and some definite diseased condition.

It is always a matter of interest to trace from their earliest beginning the various steps through which any department of science has reached that degree of completion which makes it serviceable to man; and it would, perhaps, well repay us were we to devote our attention to this part of the subject; but the time is limited, and we are far more interested in what may be called the practical acquisitions—those parts of it which have already passed beyond the domain of speculation and now have secured a firm basis of fact—which are already employed in the detection and cure of disease, or give promise of being thus employed. But no study of the germ theory of disease, or of bacteriology would be complete which would omit a grateful mention of the names of Pasteur, of Lister, Tyndall, of Davaine and Koch. It is not that to these illustrious men is due the only credit, but their names stand out pre-eminently, and will ever be associated with this subject when many others, whose steady application and laborious plodding have contributed so much to its successful unravelling, shall have again been veiled in obscurity.

There seems to be but little relation between the preventive vaccination against *rabies* or *anthrax* and the laws of crystallization of chemical salts; the one being a purely physical process, the other dealing with the most intimate changes of living tissue, the hidden chemistry of the body; and it would have been a more than a prophetic vision that would have declared, forty years ago, that there should grow from the laboratory of the Paris school a vast field of study with no lower aim than the successful solution of the causes of disease, and the no less successful discovery of a cure. It was at that time that Pasteur was making his studies of the paratartaric acid; it was at that time that he found that solutions of this salt could, under given conditions, be made to yield two kinds of crystals, one of which deviated the plane of polarization to the right, the other to the left; it was then, also, that he discovered that the introduction into the solution and the multiplication there of microscopic organisms would leave the solution entirely barren of *one* of these salts, which had evidently served as nutriment to the rapidly increasing organism. It was shown to be a constant phenomenon, and by thus first calling attention to the selective agency of these little organisms, it laid one of the great foundation-stones for the subsequent structure.

This discovery was followed, not long after, by the no less important one of the acetic ferment, the ferment of wine, of beer, of lactic and butyric acid. The idea first suggested was quickly followed out, and surprising changes effected by the discoveries in some of the most important and profitable industries of France.

The wonderful results that followed the detection of the silkworm disease were not unimportant in their bearing on our subject, since they showed that a disease of the parent, due to the introduction of a living parasite, would manifest itself in the offspring by symptoms of impaired and rapidly-failing vitality.

At the same time that France was showing such remarkable advance in scientific inquiry, Lister, across the Channel, was pursuing a line of study widely different, to all appearances, yet leading to the same result. The process of fermentation in its relation to the development of micro-organisms, and at the same time to the development of unfavorable conditions in open wounds, occupying such a leading part in hospital management, was certainly not an unworthy subject of research. The work of Lister, as it bears upon the so-called antiseptic method, is really part of the medical gospel of the day. No text-book omits the mention of his name, and while increased experience has clearly shown the inutility of many of the detals of his complicated method, the underlying principle stands fast as the great triumph of modern surgery. The exaggerated and over-scrupulous care in the management of all solutions of continuity was necessary, perhaps, to arrest the attention of surgeons and of the general profession to the hidden danger that lurked in every breath of air, and it was reserved for Tyndall to clearly demonstrate the myriads of living forms that travelled in every sunbeam.

There followed then the fruitful studies of Pasteur and Davaine on septicæmia, and the researches of Koch on traumatic infectious diseases. Their bearing on the present aspect of the science cannot be overestimated; they furnished proof of undoubted connection between the disease that was consuming the organism and the parasite that was always found in the diseased tissue; they made the cultivation-experiments, and from their purely artificial cultures obtained the same results as those which followed the inoculation of the virus, clearly establishing the identity of the organisms under both conditions.

There is even a more remarkable tie that binds our present subject with one of older date, also seemingly widely apart from any such delicate manipulations. The discovery of the aniline colors may be really said to have given the greatest impetus to labors that, without their use, would have proved, almost certainly, barren of result; and again we find verified, in this particlar, a saying of Waldeyer, that advances in histology are marked y the introduction of new coloring matters, and the ultimate natomy of any tissue is finally revealed to us through the agency f *the* particular staining fluid for which individual details have a greater or less affinity. To-day, with many other means of esearch at command, the peculiar reactions with different aniline lyes constitute an important element in the distinction of micro-rganisms resembling each other in nearly all other particulars.

It is not our province to speak of the methods of cultivation, or of the facts revealed in this way; and we enter at once upon he proper consideration of what is meant by bacteriology. To lefine it by an almost similar term, it is the science which treats f bacteria; and *bacteria*, according to the definition of Dujardin-Beaumetz, "including in this word all the microbes or figured erments, are certain minute living forms, placed on the confines f the animal and vegetable kingdoms." At the present day the eneral view is to regard them, as first suggested by Cohn, as egetable organisms. To simplify their study many schemes of lassification have been suggested. The first and very incom-lete one of Ehrenberg has been entirely discarded, and the view f Nägeli and Barry, that they were moulds, is at variance with hat of Cohn, who regards them as more closely allied to the algæ han the fungi. The very elaborate classification of Cohn, rest-ng upon a purely morphological basis will, in all probability, not old for many more years; and until we shall know more of the o-called life-conditions, the circumstances which favor or retard heir growth and reproduction, it will be impossible for us to ive this microscopic world comprehensive and rational scheme, ike that which governs our study of other branches of natural istory.

At the very outset, we encounter divergence of opinion on a ost important point, as to the resemblance of parent and off-pring—Klebs upholding the view that such resemblance always xists, Cohn holding that many different forms, depending for eir individuality on surrounding circumstances, may owe their rigin to the same parent. The physiological basis, that which eats of these bodies in reference to the results of their activity and outside of the body, is the only one that offers itself as tisfactory, but our knowledge is too limited to enable us to ake from this a comprehensive scheme.

Morphologically, Dujardin-Beaumetz, whose valuable contribution has furnished much of the material of this sketch, recognizes six forms: (1) Monad, micrococcus, or moner, immobile point-like microbes, often regarded as spores. (2) Bacteridia and bacillus, immobile linear microbes. (3) Bacteriens, cylindrical mobile microbes, the end rounded, or the body indented in the centre, so as to form a figure of 8. (4) Vibriones, eel-shaped, undulating, mobile, and flexuous microbes. (5) Spirilla and spirochetæ, corkscrew-like, spirally moving microbes. (6) Capitated microbes, *bacterium capitatum*, being mobile rods, with one or both extremities long, globular, and more refractive than the rest of the body.

This classification has reference to the cells as seen singly or in very limited numbers, when aggregated so as to form colonies there are distinguished four forms:

1. Torula, in the form of a necklace, composed of micrococci.
2. Leptothrix, made up of bacteria, clustered end to end.
3. Mycoderma, immobile, composed of bacteria in sheets.
4. Zoöglœa, being masses of bacteria, immobile, inclosed in a sort of jelly which holds them together.

Pasteur again has divided into two grand classes all these little organs, the aërobiens, which are not ferments and require the ready access of free oxygen, the anaërobiens, or ferments which abstract from their culture-medium the oxygen necessary for their life, thereby giving rise to the fermentative changes, or decompositions; because in fermentation the resulting compounds are always simpler in chemical composition than the parent substance, liquid or solid. This theory as to the action of the ferments has, however, received some very severe shocks, and can no longer be deemed secure. Thus it was shown that in the fermentation of sugar the resulting products, alcohol and carbonic acid gas, etc., contain together as much oxygen as the sugar: moreover, purely artificial chemical action, as of an acid, will produce alcohol from sugar in the same way. In addition, too, to this, the process of fermentation always goes on most readily where there is abundance of oxygen admitted, so that large, flat vessels with considerable surface-exposure yield the best results This should not be the case were the attraction of the oxygen o the culture-fluid for the bacteria of fermentation greater than that of free oxygen.

It is under the name suggested by Nägeli, "schizomycetes," that the bacteria which stand in an immediate relation to morbid processes in the human economy are now most generally known. The nature of this relation has not as yet been determined in any case, though it constitutes the key to the entire question. The schizomycetes are nearly all possessed of the power of independent movement, which is in some cases very rapid. Mühlhauser has measured it for the spirilla, and found it to equal one-third of a millimetre per second. Like nearly all other lowly-organized forms, they move toward light and air. The movement in many of these organisms is effected by a sort of cilia or flagellum, attached to one or both extremities, the mode of progression being usually by alternate flexion and extension of this process or of the entire organism; in the case of the spirilla by a helicoid rotation.

In the process of multiplication we find their numbers increase by simple fission. The parent organization divides into two parts, which may, or may not remain joined together, and each of these then undergoes a similar subdivision. When the separation does not occur, a number of single segments are united in a long chain, forming what is known as strepto-coccus or strepto-bacteria. In some cases, particularly where growth is very rapid, multiplication takes place by spores; when only one or two of these are formed, they are usually situated near the extremity of the parent organism and sometimes produce a sort of bulbous enlargement; if more numerous, they may be found throughout the entire length, and have under these circumstances given rise to the mistaken conception of a number of micrococci joined together. The spores seem to possess much greater powers of resistance than the parent; neither alcohol, boiling heat, nor compressed oxygen interfere in any way with their vitality.

These asexual spores or "corpuscle germs," are most prone to develop in just those conditions which render the direct multiplication by fission difficult or impossible; and they thus, in a measure, constitute a safeguard against the extinction of the species.

The influence of temperature on the life processes of bacteria s most marked. Nearly all of them are destroyed in a very short time by high temperatures.

Koch and Wolffhügel, as the outcome of a number of most carefully conducted experiments, report the following conclusions:

1. Bacilli without spores are incapable of withstanding the influence of an atmosphere heated to 100° C. for one hour and a half.

2. Spores of the fungi require for their destruction a temperature of 100°–115° C. (220°–230° F.) continued for one hour and a half.

3. Spores of bacilli are destroyed only by remaining for three hours in an atmosphere heated to 140° C. (284° F.).

4. In a heated atmosphere the heat enters the objects to be disinfected so slowly that after exposure to 140° C. (284° F.) for from three to four hours, objects of moderate dimensions, such as a bundle of clothes or a pillow are not yet disinfected.

5. The application of such a heat, 140° C. (284° F.), for three hours or more, as is necessary for complete disinfection, is more or less injurious to most textile fabrics.

In another essay of the same collection it is stated that in all cases where heat is at all applicable as a means of disinfection, the method of employing steam and closed apparatus is much to be preferred to any other method. Generally, as stated by Dujardin-Beaumetz, the bacteria are destroyed by a temperature of from 144°–160° F.

The bacteria do not flourish equally well in all culture-mediums, and the differences in this respect have frequently been relied upon, where other criteria were absent, to decide the question of the unity or dissimilarity of otherwise similar forms. It has been argued that the same parasite will at all times thrive equally well upon the same kind of sustenance, and that, other physical conditions being the same, the results in culture experiments should be the same. Reference has already been made to the splitting up of paratartaric acid, and instances might perhaps be multiplied to show that if a given solution be prepared containing the proper food of a certain bacterium, and many other substances in addition, only that substance will be consumed for which the affinity of the organism is well established. Quoting from Dujardin-Beaumetz, "the differences between the respective living ferments, such as the alcoholic, tartaric, and acetic, etc., are of just this character, that each, according to its own constitution, thrives on some particular nutrient ingredient, which it assimilates and disassimilates at will, while it dies in another medium not suited to *it*, but which is perfectly suited to some other ferment organism. In like manner the pathogenetic action of the schizomycetes is limited to this power of organic disintegration, in which they act the parts of ferments in furtherance of their own nutrition."

It is not long since that Brieger discovered in the human cadaver a number of organic alkaloids to which he gave the name of Ptomaines, and which he found to possess the greatest virulence, and to resemble in chemical reaction many of the more powerful vegetable poisons. Now it has been found that such ptomaines are formed where bacilli are undergoing rapid proliferation, and the theory has been advanced to harmonize many antagonistic views, that the bacterium is the cause of disease through the intervention of the ptomaine, which is itself the product of the bacterium. This theory would explain many experimental results, such as those of Rosenberg in pyæmia, where a culture-fluid was artificially filled with bacteria, the fluid carefully filtered, the filtrate found to be devoid of living organisms, and yet when injected hypodermatically this same fluid was found to be as potent in the production of the characteristic changes of pyæmia as though the specific micrococci had been present. It would be easy to determine which of the two—the bacteria or its soluble product—is the cause of disease, were it possible to isolate the two completely; we can obtain the pure ptomaine in solution, but we cannot conceive of the bacterium freed from the ptomaine. Were we to accept this theory, we could also explain satisfactorily the results obtained by Koubasoff "on the passage of pathogenetic microbes from the mother to the fœtus, and their occurrence in the milk." He has formulated the results of his experiments in a note recently addressed to the French Academy of Sciences as follows:

1. Bacilli of charbon, of rouget, and of tuberculosis, when inoculated into a recently delivered female pass into the lacteal secretion.

2. When they have once appeared in the milk they remain there to the end of lactation and to the death of the mother.

3. Fœtuses nourished with milk containing the bacilli of charbon, of rouget, or of tuberculosis do not take the disease, and remain alive even when their mothers die of the disease.

4. The passage of microbes from the mother to the fœtus probably depends upon the existence of direct communication between the maternal and fœtal vessels in the placenta. It would not require the entrance of the formed organism to produce the fœtal disease, if, according to the view above indicated, a soluble poison passed with the nourishing blood by osmosis through the vessel-wall.

Bacteria of various kinds are constantly found, not only in the earth, air, and water surrounding us, but in all cavities of the body itself, and one enterprising observer, Stahl, found only twenty-five different and distinct forms of micro-organisms in the intestinal contents, including several varieties of mucedo, yeast, micrococci, and bacilli; and the author seriously states that if he had only tried he would probably have found several more.

I do not propose to enter into a separate and detailed study of the single diseases in which bacteria have been found to play a rôle; such a course would lead us far beyond the legitimate limits of this paper, and it will suffice to enumerate anthrax, chicken-cholera, the swine plague, hydrophobia, pébrine of silk worms, septicæmia, pyæmia, puerperal fever, malarial fever, recurrent fever, pneumo-enteritis of the hog, small-pox, glanders, sheep-pox, measles, scarlet fever, erysipelas, yellow fever, typhoid fever, cholera, croupous pneumonia, gonorrhœa, syphilis, diarrhœa and dysentery, ulcerative endocarditis and tuberculosis, to show that the list embraces quite a respectable part of those diseases which are of almost daily occurrence, and come under daily personal study. For a few of these, as for chicken-cholera, anthrax, and tuberculosis, the association of the bacillus and the diseased process is fairly proved; but for the others, a weight of most conflicting testimony can be gathered. * * * *

In 1883 Friedländer described his micrococcus of pneumonia, or pneumococcus, as being a body of elliptical form and giving certain reactions with fuchsine and gentian violet. In later publications he lays less stress on the form of the microbe, and attaches a pathognomonic value to a sort of mucous capsule which surrounds it, and which, he says, is always present in the microbes of frank or fibrinous pneumonia, but not present in other forms of pneumonia, where we may have micrococci but no capsules surrounding them. He even describes empty capsules, from which the coccus has escaped. And now comes Dr. George

Sternberg, probably the most competent authority on the subject in this country, and sums up the data of a rather lengthy but interesting article as follows:

"The pneumonia-coccus of Friedländer is identical specifically with the micrococcus previously described by me, and which is commonly found in normal human saliva. The capsule, or mucous envelope, which sometimes surrounds this micrococcus, described by Friedländer in 1883, and photographed by me two years previously, *cannot* be accepted as a distinguishing character of this species, inasmuch as it is not constantly present, and the circumstances upon which its development depends have not been accurately dertermined. It is established that it is a pathogenic organism, so far as certain lower animals are concerned, and that its pathogenic power varies under different circumstances. It seems extremely probable that this micrococcus is concerned in the etiology of croupous pneumonia, and that the infectious nature of this disease is due to its presence in the fibrinous exudate into the pulmonary alveoli."

But this cannot be considered as definitely established by the experiments which have thus far been made on the lower animals. The constant presence of this micrococcus in the buccal secretions of healthy persons indicates that some other factor is required for the development of an attack of pneumonia; and it seems that this other factor acts by reducing the vital resisting power of the pulmonary tissues, and thus making them vulnerable to the attacks of the microbe. This supposition enables us to account for the development of the numerous cases of pneumonia which cannot be traced to infection from without. The germ being always present, auto-infection is liable to occur, when, from alcoholism, sewer-gas poisoning, crowd poisoning, or any other depressing agency, the vitality of the tissues is reduced below the resisting point. We may suppose, also, that a reflex vaso-motor paralysis, affecting a single lobe of the lungs, for example, and induced by exposure to cold, may so reduce the resisting power of the pulmonary tissue as to permit this micrococcus to produce its characteristic effects.

Again, we may suppose that a person, whose vital resisting power is reduced by any of the causes mentioned, may be attacked by pneumonia from external infection with material containing a pathogenic variety of this micrococcus having a potency, permanent or acquired, greater than that possessed by the same organism in normal buccal secretions; the author then supplements these statements with a number of experimental observations to show the identity of the two organisms. It must be clear from this that the micrococcus cannot be the determining cause, and if it be not, what have we gained from our knowledge of its presence? Many means have been devised to protect, if possible, the human body from the malevolent agency of this specific micro-organism, which enters, none knows how, and which does such grave and irreparable mischief. Experiments have multiplied without limit to illustrate the remarkably effective action of the various antiseptics, and while one has extolled bichloride of mercury, and another carbolic acid, a third has found in sunlight a powerful germicide. It is not easy to see what benefit the profession is to derive from the fact that a solution of bichloride of mercury, in the strength of 1 to 20,000, poured over an artificial culture of bacteria will arrest their further development. It would be rather uncomfortable, aside from the actual difficulties of accomplishing this result, to move about continually in a *nebula* of bichloride spray, as though every man were his own atomizer.

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In the introduction to the one hundred and first volume of his celebrated *Archiv*. Professor Virchow, in an article entitled "The Struggle of the Cells and the Bacteria," says: "The intellectual movement is now so active. the number of new questions daily coming to the surface so great, the multitude of experiences of all kinds so confusing, that it might seem indicated to issue a new watchword, to point the direction according to which this colossal accumulation of material shall be arranged." Referring to the tendency of all scientists to subvert every other doctrine to the action of physical and chemical forces, a doctrine which prevailed about forty years ago, when the *Archiv* first appeared, he says that then particular courage was necessary to think of life as something apart from purely physical or chemical processes. Further on we find the following: "It matters little what the explanation, if any, that some later day may bring of the ultimate cause of life on a physical or chemical basis; plants and animals, cells and tissues will still have to be acknowledged to be peculiar arrangements of complicated structure, entitled to be considered and judged of according to their own proper individuality." "The hereditary character of life is now the basis of every system of biology." "The natural consequences of the studies in cellular pathology was a certain personification of the cell." Speaking of the enthusiasm created by the discoveries of organisms in such processes as the muscardine disease of silkworms by Bassi in 1835, the parasite of favus by Schönlein in 1839, of muguet by Vogel in 1841, of anthrax by Davaine, Pollender, and Brauell in the period from 1854 to 1857, of variola and vaccinia by Keber in 1868, and of recurrent fever by Obermeier in 1873, he says, and says well, that a number of youthful explorers at once entered upon the field, and soon the world was full of remarkable discoveries from this *terra incognita.* Each new species was promptly heralded and three questions always came up for answer. First, there was the question as to the actual discovery of the parasite; secondly came the study of its mode of life; and thirdly, most difficult of all, how does it produce the disease? This third inquiry always brings us back again to the old pathology, and the cellular doctrine, of which Virchow can justly speak with pride as his creation, again asserts its right to the foremost rank.

"The proof of specific organisms is still wanting for a whole series of diseases, particularly for those which are most common, infectious, and contagious. And were this proof given, it would be but the first step in the recognition of the morbid process itself. What have pathology or therapeutics gained in the simple demonstration of a micrococcus or bacterium? Do we know anything more of the nature of recurrent fever since we have found the spirillum?

"The reversion of the old pathology is well exemplified in the history of phthisis. When Koch had discovered the tubercle bacillus, many thought that all the laborious research of the past was vain and superfluous. There was unity of the bacillus, ergo —unity of phthisis. But this beautifully simple scheme was of short existence. Pulmonary phthisis remains as it was, a multifarious process, beginning in a number of ways—now in the mucosa of the air-passages, now in the interior of the alveoli, now in the parenchyma of the lungs, and resulting in a variety of products, either simply inflammatory or specifically tubercular; and he who wishes to understand it must learn something more than how to stain bacilli. The bacillus has added so little to our knowledge of the subject that we are now again arrived at the examination of those two indispensable factors, predisposition and immunity."

Similarly with leprosy, nothing has been gained in the diagnosis, prognosis, or cure of this disease. We will do well to pause at these words of the great pathologist. Do they not convey to us a serious, thoughtful warning? Is there not too marked a tendency to neglect all else in the eager search for more bacteria, more bacilli, more specific organisms, and hence specific diseases? Dr. Jacobi, in some very pertinent remarks at a recent meeting of the New York Academy of Medicine, said: "Obermeier found a bacillus in relapsing fever at a certain period in the disease, but it had not been proven that it was the cause of the disease. It had not been found in the beginning of the disease; but even if it had been found at that period, it would be doubtful whether it was the cause or whether the disease was due to causes which were aroused by the bacillus, or whether the bacillus was the result of the disease. He did not believe we were justified in saying that the bacillus of relapsing fever was the cause of the disease."

With regard to other diseases, microscopists had been anxious to find bacilli, and thus Gaffky had his bacillus, and Klebs had his bacillus, and so on. So with reference to diphtheria, Klebs had his bacillus, which he assured us was the cause of diphtheria; Eberth discovered his bacillus, which he also said was the cause of diphtheria; and even so cool-headed and sound a man as Gerhardt was led to make the statement, only a few years ago, that undoubtedly diphtheria was a bacillus disease; but as Klebs had discovered one bacillus, and Eberth had found his bacillus, he declared that it was probable that two different bacilli could be the cause of diphtheria.

These are no idle comments, and they may be regarded as an expression of a weighty, conservative opinion, that sees but too clearly how, in the first intoxication of a supposed great victory, the tendency may be to the extreme, and may lead to neglect of serious and pressing work.

Continuing with the article of Virchow, it is stated that "the name of the Struggle of the Cells and Bacteria has been applied by the author to that circumstance the clearing up of which is the actual object of medical studies of this class of diseases. We have here two living micro-organisms arrayed against each other. Both are endowed with independent life, independent activity, and independent strength. Which is the attacking party? How does it attack? These are the questions awaiting solution."

"It will be a problem for future study to determine more carefully than has yet been done the powers of resistance of the cells and the mechanism of their struggle for self-protection."

In closing he says: "We do not wish to underestimate the value of any pathological studies, but let no man forget that etiology is merely preliminary to the study of pathology, and pathology shall only be complete when the diseased process, that is, the entire course of the disordered vital activity, shall be clearly explained."

To those who have, like many of ourselves, regarded the rapid development of the science of bacteriology with never-ceasing interest, and with as little bias as possible, though, at the same time precluded by outward circumstances from personally engaging in experiment, the many new discoveries have seemed almost bewildering. The difficulties were not lessened when experimenter No. 2 found some discrepancy in the experiments of No. 1, to be himself corrected and mildly denounced by experimenter No. 3, and so on; and it is only left for us to express the hope, while fully appreciative of all that has been done, while clearly conscious that enthusiasm is the main-spring of action in a field of study that begins and ends with the maxim "Patience," while eager, with the rest of the profession, to score another triumph for our modern medicine—it is only left for us to hope that an early day may witness the advent of that genius to whose clear and comprehensive intellect it shall be given to dispel doubt and darkness, and whose words shall be as the fulfilment of that first and greatest of divine commands, "Let there be light."—*The Medical Record.*

IDIOSYNCRASIES.

THERE are probably very few physicians who have not from time to time been seriously annoyed by the idiosyncrasies of people in regard to drugs. These idiosyncrasies are without reason that can be discovered, and cannot be allowed for by any *a priori* judgment. Perhaps one of the most serious is the case of susceptibility to the action of mercurials which some people possess. We have seen a fraction of a grain of calomel cause a most frightful and really serious salivation. A very curious circumstance which we have noticed in one or two such cases is that blue mass was tolerated when the systems exhibited the most violent reaction against calomel.

There is a well known practioner in Philadelphia who is most violently affected by the odor of hyacinths. We have known a single sprig of hyacinth put in his room without his knowledge, to cause in a few moments sick stomach, followed by violent, repeated retching, and great general depression, amounting almost to syncope. It would appear as though, if he were shut up in the room with a single hyacinth bulb in full bloom, it would cause his death. A curious feature of this case is, that the emanations will produce so much disturbance of his system without his perceiving the odor.

Another very curious idiosyncrasy that has come under our notice is in a lady who is thrown into fainting fits by eating the smallest piece of butter. We have known her tried by those who thought her condition was purely imaginative by placing a small piece of butter in a dish of mashed potatoes and giving her a tablespoonful, after telling her that there was no butter in it. In a few minutes she fell off her chair in a condition of swooning.

Some years ago one of the residents of the Pennsylvania Hospital was forced to resign because the moment he went to work in the surgical wards he became afflicted with a crop of boils which would have disrupted the heart of Job with envy. It was only years afterwards that the unfortunate doctor discovered that the boils were produced by the emanations of turpentine, which was, at that time, used in the wards for cleaning off the skin of patients to which the adhesive plaster had remained.

Not long since there came into our office a gentleman to whom morphine was given for the purpose of relieving pain. Contrary to all expectations, a violent diarrhœa was produced by the alkaloid; indeed, so excessive was the flux that it was stopped with difficulty. In this case the idiosyncrasy appears to have been inherited, as the father of the patient was accustomed to use habitually paregoric as a laxative; a teaspoonful of this fluid taken at night always produced soft evacuations in the morning.

As already stated there is no way of foreseeing these peculiarities. It ought, therefore, to be the habitual practice on the part of the physician, when prescribing for a patient with whom he has not before been acquainted, to ask as to the existence of any such peculiarities, and to pay attention to the answers received.—*Therapeutic Gazette.*

ON TUBERCULOSIS OF THE ORAL MUCOUS MEMBRANE.

Though, according to our present views, the tubercular infection may seize upon any organ or part of the system, there are some few localities in which hitherto no tubercular lesions have been found, or, possibly, have not been recognized as such. The crucial test of discovering the tubercle bacillus would, of course, preclude any diagnostic error. On the other hand, it would be scarcely justifiable to deny the tubercular character to a neoplasm on the ground that no tubercle bacilli have been found in it, for every microscopist knows how difficult the detection of the bacilli is in the chronic tubercular processes, in which but a few microbes at best are detectable. Still, it is claimed that, with a certain ample experience, this detection is feasible in every case.

In the *Wiener Med. Bl.*, No. 8, 1886, we find a discussion of several cases of tuberculosis of the mucous membrane of the mouth. One of the cases, all which leave no doubt as to the correctness of the diagnosis, is an especially interesting one. A man suffered from tuberculosis of the lungs, and, as usually, succumbed ultimately to this affection. A tubercular ulcer on his gum proved the medium of propagation of the affection from husband to wife. A few years after the man's death the woman noted the appearance of an ulcer on her lips, which proved to be of a tubercular nature. Direct infection through kissing was in this instance the evident source of this ulcer. After all therapeutic interferences (including cauterization with lactic acid) had proven useless, the ulcer was cauterized with the Pacquelin cautery and disappeared.

The following case observed by Prof. Petersen in Kiel, is likewise interesting. The patient, a man of 65 years of age, presented a very cachectic appearance and obvious symptoms of phthisis. Some years ago the man had at the tip of his tongue an ulcer,—a cancer according to his own expression,—which was extirpated and never returned. At the time of presentation the man showed on the mucous membrane of his left cheek a rifted ulcer of the size of a five-cent piece, with a hard base and irregular thickened margins. No nodes could be detected, and no pain was experienced in the ulcer, which had existed about half a year, and grew very slowly. The appearance and origin of the ulcer and cachexia of the patient spoke in favor of the diagnosis of carcinoma, while the existing phthisis and the previously extirpated ulcer of the tongue awakened the suspicion of tuberculosis. There was no clinical way to establish the correct diagnosis, but the extirpated and hardened ulcer revealed on a microscopic bacteriological examination its true nature, viz., that of tuberculosis.

Syphilis and carcinoma comprise the principal possibilities of diagnostic erring in the case of oral tuberculosis. In the former case, as Hansemann aptly remarks in a recent issue of *Virchow's Archiv*, it matters little to the patient whether the extirpated growth is of a carcinomatous or of a lupous turbercular nature, while in the latter perverted therapeutics will probably make mischief. On the other hand, a timely recognition of the tubercular nature of the growth, if originating primarily and still localized, may suggest a medication not altogether void of good prospects. Hansemann quotes four cases of oral tuberculosis, all diagnosed properly *intra vitam* by microscopic examination after an explorative operation. This procedure must after all be regarded as the only infallible way to gain the right diagnosis· Age and cachexia are anything but reliable diagnostic guides, for carcinoma may exist without and syphilis with a cachexia, and besides, syphilis is also found at an advanced age.—*Therapeutic Gazette.*

PRACTICALITY IN MEDICINE.

The word "practical" has a fascinating sound. It suggests a getting at the bottom of things. But much that passes current as practical is spurious coin. A practice implies a theory, though the latter may not be present upon a superficial examination. In time past our teaching may have been too theoretical. But the hue and cry of the times is blinding us to the true meaning of the word "practical." In our anxiety about the superstructure, are we not getting careless about the foundation?

A well-ordered education combines both the theoretical and the practical. In our efforts to succeed, we are apt to magnify the latter element and disparage the former. This leads us to strive to reach the goal by short cuts. This spirit has affected our educational institutions. Some of them are merely huge incubators, and their progeny is feeble and dwarfed. In the cold blast of competition only the fittest survive and achieve success. Circumstances have given to this latter word a meaning which it did not possess fifty years ago. How are we to define it? It is certainly not for the great mass of men what it was formerly, so far as pecuniary reward is concerned.

We regard that man as successful in the highest sense who does his own thinking and acts out the convictions to which it leads. This is the highest type of practicality.

If a man can be rightly trained in his habits of thought he will naturally make himself practical. This training must be begun in very childhood. All of our so-called educational reforms have not been unmixed blessings. Every agency which has ever wrought for human good has had in itself the potential for working a vast amount of evil. The good has resulted from a knowledge of the limitations of each agency and its applicability to the wants of men. The liability to evil results from either an endeavor to make, or a willingness to allow, an agency to work contrary to the regular laws of expansion of mind and matter. Over-production in literature has in every profession led to a lessening of individual mental exertion. To a certain extent it has removed one great aid to practicability. A sort of intellectual parasitism has sprung up. Nothing parasitic is ever truly practical. Knowledge gained without sturdy, independent thought is never lasting. We can never employ it with certainty. It cannot be converted into practical endeavor. Functional activity alone prevents malassimilation. "The knowledge which we can use is the only true knowledge."

The relation of practicality to independence of thought is thus seen to be very close.

The teachers of the natural sciences in many of our higher institutions of learning complain of a lack, on the part of their students, of originality, and of that mental tone which enables them to stand alone on whatever basis of mental endowment they may profess to have. The student regards the teacher much as a man over-board regards a life-preserver—a sure means of safety. That it is, but it is not a great aid in learning how to swim. The student can throw the blame back in part upon his preparatory school and his previous instructors. Both have suffered to a certain extent from the objective effects of over-production in literature. The many new books produced are in themselves good enough. In fact they are so good, and present their subject-matter in such an attractive form that the student will not go over the premises involved. He contents himself with merely accepting the conclusions. "There can be no doubt," says a recent writer, in speaking of biological studies, "that many teachers take the very books which emphatically urge the necessity of observation and use them just as they would a grammar or history, so that the observation in this case may be said to consist in observing what is said in a certain page of a certain book." The same criticism holds true of many students, and in medical study often leads to the formation of deplorable mental habits.

What, then, is the great guide to practicality? We regard it to be the power of close observation, a studying by each man of those clinical facts which come to his own notice. Experience will eventually show their relation to other facts to which they may seem antagonistic. The cultivation of this power should begin in the earliest student days. The "how" should be regarded as of no less importance than the "what" in considering mental acquirement. He will be the most successful in the true sense who holds, with puritanical sternness, to honesty toward himself as well as towards his fellows.—*The Med. Record.*

ARTIFICIAL ANÆSTHESIA WITHOUT SLEEP AND RETENTION OF INTELLIGENCE, MOTION AND SENSIBILITY.

In the *Centralblatt für Chirurgie* of Frbruary 20, 1886, we find an interesting account by Brown-Séquard of a novel form of anæsthesia, which he has established on animals and on man. The author published some years ago a remarkable observation of his, viz., that by irritation of the laryngeal mucous membrane he could eliminate to a more or less degree all sensation of pain from all parts of the body. This remarkable effect is brought about by an inhibition exerted by the superior laryngeal nerves upon the nerve-centres, and can be limited to almost exactly one-half of the body. Since that time Brown Séquard instituted numerous experiments on man and animals. In nine monkeys and forty-three dogs the experimenter could produce analgesia without sleep, after the opening of the trachea, by means of carbolic acid, cloroform, or sub-respiratory intramucous injections of cocaine. Especially striking was the effect of an irritation of the mucous membrane of the larynx and neighboring parts, such as the trachea and pneumogastric nerve above the branching off of the superior laryngeal nerve. Other modes of producing an irritation on the mentioned region were also tried, but proved less efficient. Among these the author mentions the following: galvanization of the superior laryngeal nerve or of the larynx, cauterization of the laryngeal mucous membrane by nitrate of silver, hydrate of chloral or other caustics, kneading of the larynx, ntroduction of a catheter into the laryngeal channel, and divis-on of the trachea or of the integument of the neck in front and on the sides. After the cutting of the integument of the neck the experimenter did not, as a rule, observe general anæsthesia, but noted the same to radiate from the wound over the entire neck down to the ends of the shoulder-blades. This fact suggested to Brown-Séquard the possibility of successfully combating the epileptiform affections of various animals originating in this zone.

The wounds themselves remain insensible up to the time of cicatrization, and in the animals experimented upon, large nerve-trunks can be cut and deep cauterization or galvanization be performed without eliciting any expression of pain. Still, in the majority of cases the analgesia produced in the stated manner extended only over the superficial parts of the body, though its duration was from fifteen to twenty hours. The sense of touch and the muscular power remained likewise intact.

It is clear that this method of causing anæsthesia can find but a limited and imperfect application in man. Brown-Séquard indeed made some very interesting experiments in this field which may possibly, at some future time, lead to some definite and available results. He exposed the person to be experimented upon for two-thirds or three-fourths of an inspiration to pure air and for the remaining one-third or one-fourth to carbonic acid gas, which, however, was at once again expired. Neither this gas nor choloform should enter the lungs, lest the analgesic influence of the superior laryngeal nerves upon the nerve-centres be removed. These inhalations had to be continued in man for twenty minutes in order to obtain the three peculiarities of this kind of narcosis, viz.: 1, A complete analgesia of the skin, lasting for forty hours; 2, a cessation of various kinds of pains for the period of two days; 3, a perfect absence of the sensation of fatigue.

Brown-Séquard concludes that it is possible by an irritation of the laryngeal mucous membrane in man and animals to decrease or even abolish the sensation of pain without interference with the intelligence, the senses, and the voluntary movement.—*Therapeutic Gazette.*

ALUMINUM BRONZE IN MEDICINE AND DENTISTRY.

BY PROF. C. SAUER, BERLIN, GERMANY.*

Aluminum Bronze, which I have utilized for the under layer of teeth-plates, is entirely free from injurious oxidation. For this purpose, and in teeth-straightening machines, it admits of easier manipulation than gold alloys or silver. I believe, therefore, that it might be of use in the manufacture of surgical instruments. Canulas, sounds, catheters, etc., might be made, and everything that is manufactured for silver. It is an alloy of 900 copper and 100 aluminum. It admits of almost as ready stamping and pressing as pure silver (which, next to pure gold, is the softest metal), and it has besides the elasticity of steel. In form of wire, aluminum bronze possesses a power of resisting tension approaching that of steel wire. These characteristics render the aluminum bronze capable of substitution in many cases for silver, and for silver and gold alloys. I have found the melting-point of the aluminum bronze to be higher than that of pure gold,—1000° C. It may, accordingly, be made red-hot without danger of melting, and manipulated with hard solder. I solder it with from 14- to 16-carat red gold, and such solder is more capable of resisting chemical influences than the silver solder, which contains zinc. 10 grms. of aluminum bronze, in the form of a lead plate, are worth 25 pfennige (6 cents), while 10 grms. of 12 carat silver, in the form of a lead plate, are worth 1 mark 50 pfennige (37 cents); 10 grms. 14-carat gold cost 19 marks ($4.75). Aluminum bronze is one-half lighter than 12-carat silver, and almost half the weight of 14-carat gold.

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For testing how aluminum bronze is preserved in the mouth, I have employed the galvanic current. Pure aluminum, with other metals, in the presence of an acid or an alkali, yields a galvanic current. Years ago, in experiments with the mouth, I found that in combination of aluminum with zinc the latter oxidizes. In manufacturing a combination of aluminum with gold alloy or platinum, under such circumstances, the aluminum, on the contrary decomposes. In two cases in which it was possible for me to weigh pieces of aluminum bronze placed in the mouth, under the influence of a possible galvanic current, and the pieces not being cleaned, and therefore not mechanically worn, after the lapse of four weeks I noticed no loss of weight. For instance, with a piece weighing 15 grms. I have been able to discover only a loss of 0.008, and, besides, after first weighing the piece, a screw was afterwards inserted, so a very slight mechanical loss of weight, therefore, took place. The aluminum bronze oxidizes only superficially in the mouth. There forms upon it a kind of patina, such as is formed in the wearing of a plate of 14-, 16-, 18-, and even 20-carat gold. It admits of manufacture into spiral springs, plates, screws, canulas, etc., for surgical purposes. Even knives have been manufactured therefrom. A solution of corrosive sublimate of 1 to 1000 affects it superficially. For its disinfection carbolic acid is to be preferred, as it does not attack the aluminum bronze. Gold aluminum bronze acts similarly, but oxidizes to a greater extent, is softer, and not so elastic, and therefore is to be used as green gold or 20-carat gold is used.—*Therapeutic Gazette.*

A CASE is mentioned in the *Medical News* in which the practice of biting the end of silk thread resulted in lead poisoning, the silk being treated with sugar of lead to give it weight.

A WARNING TO THE CARELESS.

Cleanliness is said to be next to godliness, but we are not sure that this order might not be reversed, in many cases at least, with the result of increasing the sum total of physical comfort and health. One immense advantage of Listerism, which even the most obstinate opponents of the method will not venture to deny, is that it insures absolute surgical cleanliness, and many, indeed, believe that herein consists its sole merit. But, be that as it may, the medical profession, or rather the community at large, has cause to congratulate itself that it is living under the new dispensation of the gospel of cleanliness, and not dying from poison unconsciously administered by a careless and dirty medical attendant.

A case occurring in the service of M. Lancereaux, at the Hôpital de la Pitié, and reported by M. Bezançon in *L'Union Médicale* of March 23, 1886, contains so evident a moral that we think it deserves prominent mention. The patient was a robust man, fifty-three years of age, who came under treatment for acne syphilitica. He denied ever having had an impure connection; there were no evidences of a primary lesion about the genital organs, and the inguinal glands were normal. In the neck, however, and about the inferior maxilla, were several enlarged and indurated glands; these were confined to the right side, the left side being entirely free. Upon inquiry as to the possible means of infection, it was ascertained that the man was deaf in the right ear, and that catheterization of the Eustachian tube upon this side had been performed several times. The second operation, practiced some six weeks after the first, had been followed by a sanious and bloody discharge, which, it seems probable, came from the then fully developed primary sore. Allowing twelve weeks from the inoculation to the appearance of the cutaneous lesion, the correspondence in dates would be perfect, and would point to the first catheterization as the period at which the disease was communicated.

Other cases of like nature have been reported. During the years 1864 and 1865 there was quite an epidemic of syphilis in Paris, due to the negligence of a physician who, among other specialties, had that of communicating the disease through the nasal passages. And we doubt not that many an unfortunate has acquired syphilis from catheterization of the urethra, although, as there was a sufficient cause already existing, the instrumentality of the medical attendant may never have been suspected.

A physician or a surgeon cannot be too careful in cleansing his instruments—especially those employed in the various mucous cavities for the purposes of diagnosis—every time that they have been used. They ought always to be washed in a sublimate or carbolic solution, and, if possible, passed through a flame. The practice of putting a clinical thermometer under a patient's tongue, and then returning it to its cloth-lined case after a hasty wipe (as is aften done), is particularly deserving of condemnation. —*Medical Record.*

THE ACTION OF OXYGEN ON THE ACTIVITY OF THE LOWER ORGANISMS.

Professor J. Hoppe-Seyler, of Strasburg, recently drew attention to the above subject in the *Zeitschrift f. Physiol. Chemie*, and maintains that the activity of these organisms is in inverse proportions to the admission or penetration of oxygen. The same process takes place in a fermenting saccharine solution as in a decomposing cadaver, and as in water containing fermentation and decomposition products from animals and vegetable particles. The higher the temperature rises between 32 and 104° F., and the more free the supply of fermentable material, provided there is a sufficient degree of dilution, the less efficiently does oxygen penetrate the fermenting mass. The writer conceived the idea of bringing every particle of such a mass into constant contact with a large supply of oxygen. He carried the idea into practice by a series of contrivances by means of which a flask containing the decomposed material was steadily half-rotated on its axis, so that the fluid alternately washed the side of the vessel, so that when the backward rotation took place the thin layer of fluid adhering to the side of the flask was exposed to the air or oxygen, and every new semi-rotation brought into play a new layer of fermenting mass. In a second division of the apparatus a quantity of caustic alkali, likewise in motion, took up the carbon dioxide set free. Arrangements were also made for carrying off the ammonia resulting from the process. The experiments yielded the desired results that the constant presence of free, indifferent oxygen, the only demonstratable products of decomposition of liquids containing albuminoids were; carbon dioxide, ammonia, and water. Even when the decomposition has been going on for weeks, neither hydrogen nor marsh gas is formed so long as oxygen reaches the fermenting mass, neither are the usual products of decomposition — indol and skatol — formed ; leucin and tyrosin, if at all, only transiently. These results agree with those previously published by the author, that the lower organisms, so long as they are exposed to a plentiful supply of oxygen, behave exactly as other organisms do — they absorb oxygen and give off carbonic dioxide, water and ammonia, or substances rich in ammonia. In the absence of oxygen, all the organisms give rise to the phenomena of fermentation ; whilst, however, the fungi and yeast species can live for a considerable time without oxygen, the other organisms quickly die, and the bodies of which they are composed fall a prey to the former species.—*The Medical Press.*

ANOTHER POINT OF VIEW.

"If we might express our own observations, we would suggest that a thorough education is one of the least factors in the elements which go to make the practice of medicine successful from a monetary point of view ; and we fail to see how any profession could be attractive to thoroughly educated young men in which success, in its usual acceptation, bears no ratio to learning and proficiency."—*Miss. Valley Med. Monthly.*

Editor's Specials.

"Write the Vision and make it plain."

DOUBLE CONCENTRATION, OR SPECIALTIES WITHIN SPECIALTIES.

For sake of its unfathomable mystery, it delighted our boyhood to read Ezekiel's vision of a wheel within a wheel. Only a recognition of increased mental power gained by concentration, can give rise to specialties in practice, for the human mind naturally loves variety.

At the beginning of our civil (?) war there was a great prejudice in the minds of union soldiers against the admission of colored troops into the army. After the propriety of their admission had become somewhat recognized, the late Horace Greely said the philosophy of the whole question had been solved by the first couplet of Miles O'Riley's song set to the tune of the "Low Backed Car," as follows:

> "Some say it is a burnin' shame
> To let the nagurs fight;
> And that the thrade o' bein' kilt
> Belongs but to the white.
>
> "But as for me, upon my soul,
> So liberal are we here,
> I'll let Sambo be murthered in place of meself,
> Ivery day in the year."

In like manner the entire philosophy of special practice was once illustrated in a small picture. A small boy is looking up at a larger one, and is saying, "Why gwacious, Jem, what a tie!" Jem replies, "Why yes, Fwed, that is exkazit; but I gives my whole mind to it."

Another boy might neglect the necktie, and give his whole mind to the hat, and it would become exquisite. Dentists may not be surgeons: but dentistry is a specialty in surgery. And the question arises, would not science, civilization and humanity gain by having specialties in dentistry. A man's natural genius, or the force of circumstances, may lead him into certain lines of practice, an example of which is found in a present contributor to the Journal. Now it is evident that this man would do more good were his whole time and attention devoted to the class of cases recently and at present illustrated, provided he could have patronage to keep him busy, and pay in proportion to the value of his services. Nature and study have so fitted him for this line of practice that he should be kept at it, and have his food and drink carried to him.

But would he get such patronage, and receive adequate compensation? After a while, undoubtedly; but a man's best years are spent by the time he has become an expert, as has this man.

Let it become known to the dental profession in general that he has laid aside all other practice, and is devoting all his attention to irregularities, and twenty-five, fifty, or possibly one hundred members of the profession will refer all such cases to him; and the rest will each think that he is about as "smart as the old man," and will undertake the case himself. After hesitation and several failures, each will write to our friend for advice, and those in striking distance will come to him, and he will probably find that seventeen letters a day, and verbal advice and manipulative illustration for his eleven visitors, will be a severe tax upon his time.

Now, brethren, such things ought not so to be; and may be his experience would not run in that line at all. But we are able to say that twenty years ago our profession was not ripe for a specialty between general and dental practice. Such a specialty is loudly called for by afflicted humanity, and scores of dentists, with tongues and pens, urged us in that direction. It is quite well recognized by us that we were not the proper party to open up this new line, but then, (as we think they would now,) a large majority of the profession would come with their patients who had diseases of the mouth, antrum, etc., apparently fearing we would coax them and their friends away from them, and after getting our advice as to the entire case, they would say to their patients, "Come, we'll go back"; and with a nod at us, would add, "I'll make this all right some day." Less than fifty dentists pursued a course any better for us than that just described. Of course the readers of the Journal didn't do that way. And of course, it didn't take us long to see where we had made a mistake.

It is difficult for a man in general practice to charge a suitable fee for special cases; and this is a strong argument in favor of specialties. And a number of specialties in dental surgery are yet to be recognized; but as by a physical infirmity (a "thorn in the flesh") we have been shut out from personal contact with the profession, we are not able to judge as to its ripeness for specialties in general, or for any one in particular. This explains why we are not giving advice in this direction, though often solicited to do so.

Then, again, a practitioner dropping general for special practice will have trouble in getting the fact recognized. He certainly labors at a great disadvantage if he must keep quiet while his neighbor, the charlatan, uses printers' ink, painters' brushes, etc. The genuine special practitioner ought to be allowed to give notice by means of the professional periodicals, at least. Our patrons seek us on account of their infirmities and misfortunes. Shall we force them, by a rigid interpretation of a code of ethics, to advertise these? Suppose the specialist confines his practice to the treatment of irregularities. Must a refined, sensitive, and *beautiful* young lady (except that her mouth is deformed) go along the streets and lanes of the city, like Wisdom in the Proverbs, saying to those she meets,—Excuse me, stranger; but see how my mouth is deformed. Can you direct me to the man that will make me pretty?

With present views, it seems the practitioner must wait and become wrinkled and gray, before his expert talents are recognized. And then, by the next year he will be regarded as *too old* to be reliable. There ought to be a remedy. The old gray squirrels enforce a code of ethics by which they retain the most pleasant parts of their practice, to the exclusion of the younger practitioners. It seems to work well in the forests.

But if any one despises quack advertising more heartily than we do, we shall drop our sentiments and adopt his.

STARVED ON BEEF TEA.

From the time that the memory of man runneth not to the contrary, a popular delusion in reference to to the above article has been a torment and a source of danger to the sick,—a torment because to the sick, as to the well, the very idea of swallowing it is disgusting,—a source of danger, especially where derangement of the nutritive functions is a leading element in the disease, because, it being relied on almost entirely to the exclusion of food, the patient is starved, if not to death, to such extreme prostration that the vital forces are not able to rally.

We are glad to see that this matter is beginning to receive the attention its importance demands. As the dentists have the care of organs early concerned in the process of nutrition, it becomes them to study the subject well, and to enlighten their patrons as opportunity arises. And especially let them try to impress the truth of this matter on the physicians whom they meet.

Nothing but food will satisfy hunger; and beef tea is not worthy of the name. A late exchange says it may be made valuable as a food by the addition of milk. Ground barley and sawdust mixed, make good feed for horses; and it is stated on good authority that the higher the proportion of barley the better the horses like it, and the more nutritious it seems to be. Apply the suggestion to the mixture of beef tea and milk, let the milk be fresh from the cow; then secure a nurse with a bad memory, so that she will forget to add the tea.

A half century ago but little attention was given toward making medicines palatable. As a general rule a sensible patient had greater dread of the prescriptions and nursing than of the disease. Beef tea came in under that regime, and is a fair specimen. "Let the dead past bury its dead."

THE AMERICAN DENTAL ASSOCIATION.

The next meeting will have become a matter of history before we have to write for a number of the Journal to succeed this. In years gone by we looked upon our attendance at the meetings of this body as a matter of course. Now we can scarcely look upon it as a matter possible. Niagara seems to be a great distance off. August is usually hot. So are June and July. So much heat has had time to relax us that we dare not hope to attend. But this time we would probably be prevented even if strength were given. The week of the meeting is the time set for the trial of Chas. Morris for the murder of our brother Dr. J. Douthett. The trial has been once postponed by the defence. We suppose the hope is that time will cool the excitement, and testimony will be scattered and lost.

Before the *post mortem* examination we had hope that the deaths resulted from accident, as we altogether supposed at first. But the large clots of blood found under the fractures, testified to murder with absolute certainty.

But we have wandered from our heading. We suppose a place will be chosen for the meeting of 1887. Why should the Association go peddling over the country? And if it must meet in "dog days," why not confine it to the northern lakes? If the *dog*-star has hydrophobia, he may not come up thither through dread of the water. Let science and not scenery be the governing idea for arranging for the meeting. We hope for good things from the coming meeting. Let all who can be there, each ready to give and to receive. A free exchange of thoughts will result in good. At the place of its birth the Association should fulfill the hopes excited by its parentage.

RETURN OF DR. A. A. BLOUNT.

We learn from the *Globe-Republic* of Springfield, Ohio, that Dr. Blount, who left there in 1877, to practice in Geneva, Switzerland, returned June 16, together with Mrs. Blount and their children.

Societies.

"Wherewith one may edify another."

MEETINGS.

American Dental Association, Niagara Falls, Tuesday, Aug. 3, 1886.

National Association of Dental Faculties, Wednesday, Aug. 4, 1886.

MISSOURI STATE DENTAL ASSOCIATION

Is officered as follows: President, Wm. N. Conrad, St. Louis; First Vice President, R. R. Vaughn, Marshall; Second Vice President, T. M. Nicholson, Fayette; Recording Secretary, John G. Harper, St. Louis; Corresponding Secretary, Geo. L. Shepard, Sedalia; Treasurer, Jas. A Price, Weston.

John G. Harper, *Rec. Sec.*, 516 Walnut St., St. Louis, Mo.

India Rubber is menaced with a rival. The rubber dealers of Eastern Nicaragua think they have discovered a tree whose gum will give as much satisfaction as rubber, and will, in fact, take its place. They say that the milk of the tuno furnishes a most excellent gutta-percha, equal to the best found in the Eastern tropics, while the number of trees is virtually inexhaustable, and the gum can be produced with profit at twelve cents a pound.

Our Aftermath.

The Comparative Cost of Foods.—Oatmeal is one of the cheapest foods we have; that is, it furnishes more nutritive material, in proportion to the cost, than almost any other. Wheat-bread and rice, on the other hand, are the most expensive, in proportion to their cost, of the staple vegetable foods. By taking into account all the nutritive substances, it is estimated that twenty-five cents will pay for 0.29 of nutrients in beef sirloin, 0.40 in round beef, and 0.92 in neck beef; oysters, 0.12 to 0.17; shad and bluefish, about 0.28; smoked herring, 1.21; cheese, 1.08 to 1.35; milk, 0.99; wheat-bread, 2.08 to 2.75, etc. Of course, in the comparative value foods, their actual physiological use is not unimportant. Foods rich in nutrients may not be readily assimilable, and only physiological experiments can finally determine their actual nutritive value. From a study of the dietaries of factory and mill operatives, mechanics, and other people engaged in manual labor in Massachusetts and Connecticut, the most noticeable features observed were the large quantity of food consumed, especially of animal food and fats. The total amount of nutrients per man per day varies in the Massachusetts dietaries from 690 grammes to 1,052 grammes; while in the European dietaries the normal range is from 653 to 863 grammes. In the European the consumption of fats ranges from 13 to 100 grammes, while in the Massachusetts dietaries in no case does it fall below 127, and reaches as high as 304 grammes. If common usage in Europe, and the standards which are currently accepted there, are correct expressions of the proper quantities of food and of fat for healthful nutrition, the quantities of total food, of meats, and especially of fats, in the New England dietaries examined, are needlessly large, and in some instances excessively so. The dietaries studied, all pointed in one direction, indicating that in this country a large excess of food is consumed, not only by well-to-do people, but also by those in moderate circumstances. This excess consists mainly in meats and sweetmeats, which are expensive, as well as physiologically injurious when consumed in too large quantities.—*Science.*

Articulating Teeth.—When will some dentists learn that it is just as important to have a proper articulation, as a properly fitting plate?

Many an otherwise perfect denture is rendered useless from this cause.

Among other things to be observed these are essential points:

The bearings should be on the *bicuspids and first molars*, and uniform on both sides; a slight closure on one side, harder than on the other displaces the plate.

The six anterior teeth should not meet, but a good margin be left, at least an over-lap of one-sixteenth inch; and even then they will be found after a time to interfere, and crowd the upper plate forward and down from the rear.

If the second molar strikes when first worn, it will soon crowd, and if there is a lower denture, the plate will be forced into the membrane.

If there is a lower wisdom tooth it often stands at an angle of forty-five degrees, and consequently, if it meets the upper tooth, will crowd the plate forward. Do not let them meet under these conditions.

It is important also that the bicuspids and molars stand at such an angle as to tend to hold the dentures in place, rather than to tip or upset them.

Over-hanging *cusps* in a majority of cases, while following nature, are often the source of mischief as the *lateral* action of the jaw causes the displacement of the plates.—L. P. HASKELL in *Items of Interest.*

THE DIGESTIBILITY OF VARIOUS KINDS OF FOODS ACCORDING TO VANDERBECK. *Meats.*—Easy to digest: Mutton, venison, hare, sweetbread, chicken, turkey, partridge, pheasant, grouse, beef. Hard to digest: Pork, veal, goose-liver, heart, brain, lamb, duck, salt meat, sausage. *Fish.*—Easy: Turbot, haddock, flounder, sole, oysters, trout, pike. Hard: Mackerel, eels, salmon, herring, salt fish, lobster, crabs, mussels, cod. *Vegetables.*—Easy: Asparagus, French beans, cauliflower, beets, potatoes, lettuce. Hard: Artichoke, celery, spinach, boiled cabbage. *Fruits, etc.*—Easy: Baked apples, oranges, grapes, strawberries, peaches, cocoa, coffee, black tea, claret. Hard: Apples, currants, raspberries, apricots, pears, plums, cherries, pineapples, chocolate, pickles, beer.—*Journal of Reconstructives.*

OPEN MOUTHS.—"I am going to write a book on unnoticed peculiarities," says a Pittsburg man, "and am going to devote an entire chapter to the fact that ninety per cent. of all the women one sees passing on the street will have their mouths open. I have made a number of observations, and figure it up this way: Out of 100, 1 will have the toothache; 5 will be chewing gum; 29 will be talking; 34 will imagine they have pretty teeth, and will be trying to show them; 6 will be asthmatic, and have to have their mouths open to breathe, and 15 will be staring straight ahead, looking at nothing in particular, but just keeping their mouths open. Of the 10 who are not included in the list, at least 8 will be old ladies without teeth. Out of 100 men, about 10 will be noticed with their traps unclosed."—*Daily Paper.*

DEATHS FROM ANÆSTHETICS IN 1885.—The deaths during narcosis in the past year in England have been collated by Dr. F. H. Jacobs, and reported in the *British Medical Journal.* Twelve deaths occurred in chloroform narcosis during an unusually severe list of operations, only four being trivial. The casaulties from ether are but three—a small record, considering the general use of ether in English surgical centers. No death is recorded from methylene bichloride, or from mixtures of ether and chloroform.

DENTAL JEWELRY.—Monsieur Toto, aged seven (to his second cousin, Miss Helen, whose mother has been compelled to rely greatly upon the dentist's art for the preservation of her molars and incisors):

"My eye! what a rich woman your mamma must be!"

"Why?"

"Why, she even wears gold rings on her teeth."

A Mastodon.—The discovery of the remains of a monster Mastodon by Henry Neimeyer, on his farm five miles northeast of Mattoon, Ill., is a subject of much wonder to students of prehistoric times. Mr. Neimeyer was excavating a ditch through low prairie land, and when only three feet from the surface he came across huge teeth four inches square on the face, with incisors or cusps, which must have been fully two inches deep before being worn off. A number of these teeth were found connected, as though the bone had decayed away from them. The enamel is in an excellent state of preservation and as hard as quartz rock, which it resembles closely. The teeth are now on exhibition in the drug store of T. R. Weaver, in Mattoon, Ill.

Bacillus.—Only a few months ago, the chorus of the supporters of Koch was somewhat after this fashion:

What is consumption? The bacillus.
What is the bacillus? Consumption.
But what causes consumption? Why, the bacillus.
But what causes the bacillus? Consumption.

And now I ask, in the words of Professor Loomis, "whether they (these microbes) are the *cause* or the *scavengers* of disease?"—Dr. Beverly Robinson in N. Y. *Medical Journal.*

Expansion Produced by Amalgamation.—Profs. Ayrton and Perry have accidently observed that the amalgamation of brass is accompanied by great expansive force. If one edge of a straight, thick brass bar be amalgamated it will be found that in a short time the bar is curved, the amalgamated edge being always convex and the opposite concave. The authors imagine that a similar action may be the primary cause of the phenomena presented by the Japanese "magic mirrors."—*Electrical World.*

An Alloy Fusible at 71 Degrees Centigrade.—Professor Gutherie has just discovered an alloy which melts at 71 degrees Centigrade:

Bismuth, - - - - - - - - -	47.38 parts.
Cadmium, - - - - - - - -	13.29 "
Lead, - - - - - - - - -	19.36 "
Tin, - - - - - - - - - -	19.97 "

—*Le Progrès Dentaire.*

Corundum is principally obtained, says the *Dental Eclectic*, from the extensive deposits in North and South Carolina. The ordinary corundum is brittle, translucent, infusible before a blow pipe and insoluble in acids. It is the pure aluminia in the native crystalline state.

Professor, looking at his watch—"As we have a few more minutes, I shall be glad to answer any question that any one may wish to ask." Student—"What time is it, please?"

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

Vol. VI. SEPTEMBER 1, 1886. No. 9.

Contributions.

"A word fitly spoken is like apples of gold."—Solomon.

IRRITATION.

BY GALEN, XENIA, O.

The readers of the Journal, will bear in mind that in our former articles on a kindred subject reference was made to the above caption, and though our present subject should have taken precedence, still at the time they were written, there seemed to be a call for them, but now we propose to give some thoughts on irritation, as a foundation for future articles, as time and opportunity may offer.

Any morbid excitement of the vital functions not amounting to the dignity of inflammation is termed *irritation.* This may be ascribed to a variety of causes, notably an excess of the ordinary agents to good health, such as food, drink, air, heat, light, and electricity; and from the action of substances having acrid, or stimulating properties, whether extraneous to the body, as various medicines, or poisons, or produced within it, as acrid secretions, healthy secretions too long retained, products of chemical changes, parasitic animals, and even the blood itself, if too abundant, of deteriorated in quality, from excessive, or perverted mental action, and from causes atmospheric, such as miasma, contagion, and epidemic influence.

Physiological laws may be the cause of irritation, when they are indirectly operated upon by antecedent influences. The system seems to possess a certain amount of excitability; and if this excitability be called into excessive action, then a corresponding period of exhaustion comes on, which must be followed by a sufficient period of repose to recruit the overtaxed energies.

If, on the other hand, from a want of proper stimulus it is allowed to rest or be restrained, it afterwards upon the removal of this restraint, is increased, and the amount of excitation is such, as to interfere with health, and may be classed as a morbid condition. Hence, depressing influences, if only temporary, indirectly produce irritation by reaction.

This may not be true of all the system, yet it is true of a part. A good illustration is when the hand is exposed to cold, and is suddenly brought into a warm room; here a degree of heat which was sufficient to sustain the natural condition of the part is reduced, the nervous energy, and the blood in the part being diminished, must necessarily be increased in some other part; and if this condition of affairs long continues, irritation in the part or organ is the result.

These results which occasion a change in the circulation of the blood, giving some parts an undue quantity, are a fruitful cause of irritation. Yet in obedience to the physiological law, the system possessing a certain portion of excitability in a certain part, some other part experiences a corresponding depression. Thus we have, at the same time, an increase of excitability, and of the exciting agent in the same part of the body, and irritation is the result. This is a source of disease in many cases. Many cases of internal irritation, have their origin in the application of external cold, and are examples of this principle.

The blood leaves the surface, and seeks certain inner portions of the body, which are unduly excited thereby, and irritation is the presence of it in a certain part, which has a sympathetic connection with another part, a good example is irritation of the heart, in dyspepsia. All portions of the body are so bound together by a chain of sympathies that no strong impression can be made on any one part, without the whole system being affected, if the part with which it is intimately associated, is the part that holds the primary lesion. Continuity of parts, of a similar structure, are the most favorable to the spread of irritation. Thus if one point in a serous membrane becomes affected, the disorder spreads very rapidly, and frequently involves a large portion of the tissue before its course is arrested. If an absorbent radical be the seat of irritation, it quickly follows the absorbent to the nearest gland, while the neighboring parts are but little affected.

An investing membrane often communicates a diseased condition to the organ it covers. For example the spasmodic contraction of the muscular coat of the alimentary canal. But parts often sympathize, which are distant from each other, and have no immediate connection. This is probably occasioned by the intimate connection of brain, spinal cord, and ganglia. We have numerous examples of this, the heart and the stomach, furnishing quite a number. Thus we have a brain injury, and gastric irritation as a sequence, with nausea and vomiting.

The heart is often thrown into strong irritation by sympathetic disorder of the stomach. In a word, the whole system often suffers from irritation, by the affection of a single organ.

It sometimes happens that the irritation becomes the most prominent feature of the case, and the disease is made to take a secondary place. Metastasis is an example of this. The facility with which irritation may be produced, depends on the general condition of the system.

When excitability is equally distributed, and all the organs of the body are performing their proper functions, disease can find no point unguarded, and generally passes to some one less careful. Elevation above and depression below the standard of health, are equally provocative of attack of diseases of irritation.

A full habit, in which the blood is excessive in quantity, and too rich in quality, though the complexion be good and the digestion normal, nutrition active, and the other functions in apparent good order, still it is not an evidence of vigorous health. Such an one, is always on the borders of disease, and the slightest irritant is sufficient cause to rouse the latent tendency to action. The blood being so stimulating, as to bring every organ to the highest point of action, a slight stimulating tendency crowds the system beyond its capacity, and the result is disease. When irritation is brought about under these circumstances, the blood-vessels are nearly always involved, and it is but a slip from irritation to inflammation; and unless we have abundant secretion, or hemorrhage, the case is likely to prove one of disease. Persons that have returned from long journeys, having changed diet and habits, are often liable to inflammatory diseases.

A system enfeebled by depletion, by abstinence, by imperfect digestion, or any other cause, is often irritated, though in a different manner from the plethoric person; yet over-excitement is sometimes present, and becomes a large factor in the causation of disease.

The blood-vessels are not, as a rule, the point of attack in these cases, but the nervous system is, and the attack culminates in neuralgia, spasm, or other nervous disorder.

Often the functions are much deranged, without any discoverable organic lesion, and but little tendency to inflammatory action. The heart is often thrown into agitation, and tremulous movement, without any alteration of its own structure, or any special vascular irritation.

In various diseases, particular organs acquire increased excitability, and produce disorder, when the same cause in health would produce no effect. Hence, we say that the system, when in an enfeebled state, is irritable because it is easily excited into disorder, and often runs into inflammation. But though a state of debility predisposes to a nervous derangement, and functional disturbance, it would be a great mistake to suppose that it indisposes to inflammation, for, on the other hand, any irritation excited leads to inflammation, and is more apt to occur under such circumstances than in health. In certain diseases, particular organs acquire increased excitability, and distress, that in health would not be noticed.

When an irritation has been produced, it often continues for a time, after the orginating cause has passed away.

When the system has been affected by irritation, or any agitation, time is required for the various organs to assume their wonted calm of health, the system to move on without interruption, still where irritation assumes a permanent form, there is reason to expect constitutional disturbance.

I am aware, that certain writers claim, that the system possesses only a certain amount of excitability, that a universal irritation cannot exist, and that an irritant applied to the whole system can irritate only a part, but this does not necessarily follow, admitting that the system has a limited amount of excitability, is it not true that all of this excitability is employed in health. It is easy to conceive that by increasing the stimulation of all the organs, the excitability in reserve may be brought into action, and a general exaltation of the vital functions be pushed beyond that of health. But as there is only a certain amount of blood, and as it is necessary to have an increased supply to produce exalted function, it follows that universal irritation is impossible; because, the blood must be held everywhere in equilibrium, and there could be no accumulation in the body in general, sufficient to produce irritation. But there can be a superabundance of blood in a part, at a given time that will give rise to the effects of irritation, which may become universal. It has not been, nor can it be proved, that there never has been a case of general irritation, but such a case does not long continue, for the excitement must soon pass away, and depression follow. It is very rare that a stimulating agent is applied to the system in general, to which all the organs of the body will respond, sufficient to produce a morbid action or lesion. But when a stimulating agent, is universal in its application, certain organs are much more susceptible than others to its influence, and these first being excited to a high degree of irritation, absorb all the excitability, and call off from other organs the influence that might be sustained by them, if the agent was local in its application. And further, this influence may be so marked as to produce, in some of the surrounding tissues actual depression.

Therefore, we have as a result, in the operation of general stimulants, irritation in some organs, and depression in others, and this is still more common, when the operation of the same is partial. Hence, in a great majority of diseases, there is a mixture, or blending of the two opposite conditions, though the preponderance of the one or the other, gives tone or force to the subsequent disease.

We often see irritation in a part remote from the real point of lesion. This happens when the disorder attacks a tissue, upon the due action of which some other part or parts depend, for the ability to perform their functions. Thus muscular motion, to a certain extent, depends on the supply of nervous influence from the brain, spinal marrow or ganglia. Irritation, therefore, in either of those structures, or along the tract of any ganglionic branch may produce great disturbance, and be the cause of disease. Hence, paralytic, spasmodic, and convulsive affections, with many derangements of the secretory functions, often depend upon diseases of the nervous centers.

It is no doubt true that each particular function dependent upon nervous influence receives its supply from filaments or tendrils peculiar to itself, or direct from the brain, or cord, which presides especially over it.

We have nerves of special sensibility and general sensibility; as in sight, hearing, tasting and smelling.

A certain degree of cold benumbs the sense of touch, while the sensibility of painful impressions, so far from suffering diminution, is increased and, in certain morbid conditions, the touch is exceedingly acute, while the sensibility to painful impressions, is almost, if not altogether lost. Hence, teeth may be drawn, and many surgical operations performed, while the parts are in this condition, and scarcely any pain be felt.

It has been demonstrated by Mangendie that sensibility, and the power of motion depend, in many instances, upon distinct nerves. But we can go farther and say that each part, in an association of parts, devoted to the same office, has distinct nerve fibers, by which it communicates with the source of its power, and that each muscle is thus provided. For, if this was not true, how could the will control any particular muscle, to the exclusion of the rest? Nearly every variety of functional derangement, may have its orign in irritation of a single point in the brain cord or ganglia, or the nerves that connect these organs with the seat of the function; and remedies addressed to the actual seat of disease, will soon prove beneficial, while, if confined to the apparent point of lesion, they prove of no avail. Hence, the importance of the physician, and dentist bearing in mind these general facts, and being guided by them.

THE OLD DEPTFORD ACADEMY.—It was whispered that he knew of charms by which he could constrain a person, even in the misery of toothache, to fall asleep while Mr. Brinjes would take out a tooth without causing him to awaken, or to feel any pain whatever; but these things we may not believe, however well authenticated, unless we would seriously accuse him of magic. —"*The World Went Very Well Then,*" *by Walter Besant.*

REMINISCENCES, ETC., ABOUT GOLD.

BY THE EDITOR.

"All is not gold that glitters," as may be proved by reference to the "glittering generalities" so often found in political speeches.

In the present state of the arts and sciences, it is scarcely too much to claim that dental surgery, alone, is able to make gold useful. In every other department of life, in every occupation, something else is to be found that will take the place of gold, and supply the want as efficiently as the glittering yellow metal. But when a cavity of decay, in a tooth otherwise good, is to be filled with reference to the arrest of decay, and the preservation of the tooth, if the walls of the cavity are reasonably strong, gold is more reliable than any other known material, and, at the same time, there is less objection to its use. It is doubtful if any but dentists can find use for gold where something else will not serve the purpose quite as well.

The first time we ever saw a gold beater at work, was in a retired room, in the rear of a building. He was making gold-leaf, not foil. We watched the beating with much interest. The hammer seemed quite too heavy, but it was handled with apparent ease. Still, our thoughts were like those of the refractory prisoner in the old penitentiary. He refused to work, and was placed on the inclined wheel of a treadmill. On it he had to walk, or do worse; but to walk was to work in aiding to turn the wheel. At the close of the experiment he suggested that it would be as well for all concerned, and more pleasant and easy for him, if the mill were run by steam. We felt that the big hammers should be wielded by steam.

But we felt more interest in another part of the business. Another man was "making up the books." Small books of tissue paper were piled beside him, and he was cutting the beaten gold into leaves of the size desired, and placing them between the leaves of the books. We noticed that there were many irregular fragments, any one of which was too small for a leaf. He laid two or more of these pieces together, allowing them to over lap each other at their points of junction. When thus laid he drew what he called a cane-knife rapidly across them, making firm pressure with its edge, after which he wiped away the overlapping portions, and thus he formed a piece from which he could cut another leaf. We noticed that at the lines of pressure the gold seemed to be quite as adherent as at any other portions of the leaf. At once we added gold to our list of weldable metals, and have kept it at the top of our list ever since—at the top, because it can be welded at common temperatures, while iron requires a red, and platinum a white heat in welding.

The above observation was made when we knew nothing about dental surgery and its wants. Hence, we saw nothing to be gained from our investigation, that could be put to practical use in dentistry, nor even in general surgery, in which our line of study lay at the time, as a medical student.

After having turned our attention somewhat toward dentistry, we had a conversation with Dr. A. M. Leslie on gold, and we referred to this process we had called welding. He did not regard it as welding ; and to illustrate his view of the matter, he referred to a leaf of foil that had fallen on the floor, which he was permitting to lie till its cohesive property would pass away, so that he could lift and place it in a book without mutilation.

At a later date, during a meeting of the Mississippi Valley Association, when some members were advocating the making of contour fillings, by taking advantage of the welding property of gold, Dr. L. earnestly opposed the practice as dangerous and quite unreliable ; and he spoke of foil losing its adhesiveness by time and exposure, and held that fillings made in reliance on this claim of welding would, in a shorter or longer time, disintegrate.

At a date still later than this, Dr. James Leslie, also in the Mississippi Valley Association, advocated the sentiment as held by his brother, described above, and while conducting a series of experiments with gold foil, especially showing different ways of annealing it, he annealed three leaves of number six gold foil, and laying them on each other, without intervening paper, pressed them together with his finger, and showed us that they seemed to adhere, as if welded, throughout their entire surfaces. He told us that in a few weeks, (or months, perhaps,) they would lose their adhesive, or cohesive properties, and separate, thus demonstrating that they had not been welded. Before he left the floor we bought these three adhering leaves, and sealed them up in a box, into which atmospheric air was freely admitted. They were thus kept till the next meeting, and when the box was opened they were practically but one leaf, the cohesion being perfect throughout.

The Doctor Leslie brothers were correct in claiming that time and exposure caused the foil to lose its cohesive properties. And cooling red hot iron causes it to lose its welding properties, but the cooling does not separate pieces already welded. In like manner, exposure and time destroy the welding properties of gold, but they do not disintegrate that which is already welded.

It seems strange now that there was such great unwillingness to recognize the weldability of gold, at the time it was first claimed. At a meeting of the American Dental Convention, at Hope Chapel, New York, in 1856, Dr. J. Taft, while describing the properties of, and the method of using "crystal gold," referred to this welding property as enabling us, all the more readily, to make contour fillings. The venerable Chapin Harris, of sacred memory, was President of the Convention. He called the Vice President to the chair, and, taking the floor, said he regarded it as so important to avoid running into error, that he felt it his duty to make a correction. A young brother had spoken of the welding property of gold. This he thought was a serious error, as by the science of metallurgy we learn that there are but two welding metals, and these are iron and platinum. (As was done by many others at that date, he called the latter metal *plateena*). Hence, he said, to speak of welding gold in filling teeth was a dangerous error.

Dr. Buckingham claimed that the gold was not welded, in the class of fillings described by Dr. Taft. To illustrate his position, he called attention to the fact that serrated pluggers had to be used to accomplish the result referred to; and he said that if two plates of sheet iron were laid together, and a punch were repeatedly driven through them, by blows from a hammer, they would cohere. We suggested that the iron plates would be thus held together by a species of riveting; but Dr. B. said he was not satisfied to call it riveting, but he could not regard it as welding.

Not long before this date the largest society then in the dental profession, the Ohio Dental College Association, by a silent ballot, and without nominations, had elected the present writer as its teacher of metallurgy in the college. This led us to feel that without impudence or presumption, we might follow the advice of the young man who, though at first afraid, came to the conclusion that "Great men are not always wise," and said "Therefore * * * I also will show mine opinion." So, after recognition by the chair, we called attention to the fact that beaters of pure gold were daily welding fragments of leaves together, by simple hand pressure, at ordinary working temperatures, adding the statement that while iron and platinum can be welded, the one requires a bright red, and the other a white heat, and therefore gold is preëminently *the* welding metal, as it welds at common temperatures.

A member of the faculty of the Baltimore College obtained the floor, and stated, in substance, that if it were true that gold can be welded at ordinary temperatures, or, indeed, at *any* temperature, a new fact in the science of metallurgy has been this day promulgated. But, Mr. Chairman, said he, we have seen young upstarts before.

Of course the Publication Committee struck out all such remarks, even if the reporter had taken them down; and neither of the young persons referred to made any reply, being quite content to await the progress of scientific light for vindication. And the wisdom of this course was demonstrated fully; for, soon afterward, the Baltimore Professor wrote a valuable series of articles on gold, in which he referred to welding it, as if it had never been in dispute.

In the earlier days of dentistry there seemed to be a lack of definiteness in refining gold scraps and filings. In the days long gone by gold, and silver too, seem to have been refined by the simple process of roasting. By prolonged fusion the base metals were burned out, hence, the process might properly be called purifying by oxidation. It is very difficult, if not altogether impracticable, to separate tin from gold by this process unassisted. And as even a very minute portion of tin renders quite a mass of gold useless, the prophet Isaiah uses it, figuratively, as a type of sin contaminating the whole moral nature of man.

When we came into the dental profession few that we met gave much consideration to the character of the foreign metal contaminating their gold scraps. They put them into a crucible and heated up with salt petre, and if that did not give satisfactory results, they tried corrosive sublimate, or something else.

This was quite unsatisfactory. Hence the inquiry was raised as to the action of the various refining agents used in the dry processes of refining. From the nature of its composition, it was evident that nitrate of potash could only oxidize the base metals. And by a similar process of investigation, it was quite as evident that corrosive sublimate could act only by giving out its chlorine. We took some pains in a lecture to a class in the College, and afterward condensed the same ideas in an article for the *Dental Register*, to set forth the three dry processes of treating gold scraps, and to explain why, in any given case, one was preferable to the others, and also why, in some cases, more than one of them must be used.

To get rid of the base metals in gold alloys, by the dry modes, they are to be reduced to oxides, chlorides, or sulphides. Hence we used the terms oxidation, chloridation, and sulphidation, to express the three ideas.

In selecting the chemical reagents for these processes, it is necessary to take those that are decomposed by the heat necessary, to melt the gold; and at the same time, they must furnish nothing to combine with and spoil the gold. For example, in chloridation, common salt, which is chloride of sodium, will not answer, as it is not decomposed by the heat. And chloride of lead might chloridize the alloys, but its lead would unite with the gold, and thus the process of oxidation would be called for to separate it from the gold.

Perhaps nothing suits better in chloridation than the chloride of mercury—corrosive sublimate—as it decomposes readily, and its mercury is driven off by the heat, or is reduced to an oxide.

In like manner, nitrate of potash—salt petre—answers for the process of oxidation.

In sulphidation, the black sulphide of antimony is generally used. It is readily decomposed by the heat, and its antimony combines with the gold, while the sulphur takes the alloys. Then, to finish, resort is had to oxidation. By blowing a current of atmospheric air on the surface of the melted gold and antimony, the latter is rapidly oxidized, and is carried away in white fumes.

Now almost any one can see that the selection of the proper dry process for any given case is important. Chlorine has a much stronger affinity for tin than has oxygen. Hence chloridation is the process for the removal of tin; yet in years gone by, and before we knew anything of dental surgery, we have seen gold roasted by the day in nitrate of potash, when contaminated by this metal. And later, we have seen scraps persistently treated in the same way to get rid of a lead color due to the presence of platinum. Of course the color would get worse, if changed at all, as some of the gold might be burned out in the process, thus increasing the relative proportion of the platinum.

When gold is contaminated with platinum, none of the dry processes will answer a practical purpose. The wet method then comes in. Let the metal be dissolved in *aqua regia*, composed of three parts, by measure, of hydrochloric acid and one of nitric acid, both chemically pure and concentrated.

This reduces the gold to a terchloride; and now, if the solution is diluted with pure water, pure gold, in a fine powder, may be precipitated by a solution of cane sugar, oxalic acid, etc. But it is often more convenient to precipitate with sulphate of iron. A solution of this throws down the gold, in the form of a dirty looking brown powder. This powder ought to be soaked—digested, if you prefer big words—in dilute sulphuric acid, as otherwise, a very minute proportion of iron is found in the gold after melting. The presence of iron from this source, causes gold fillings to assume a purplish color in some mouths. When thus washed with sulphuric acid, the gold is pure.

And this reminds us of an unpleasant reminiscence. A popular dentist from the east was visiting in Cincinnati, and spent several days with us the closing week of the college session. In a lecture, to which he listened, we detailed different processes for preparing pure gold, in accordance with the request of the class. He remained for the meeting of the Mississippi Valley Association. While discussing materials for filling teeth, he eulogized a certain brand of foil, claiming it to be superior to all else in the market, and stated that the reason it was superior was that no one but its maker knew how to purify gold, so as to have it free from all alloy. He said he knew that others claimed they could prepare pure gold, and, indeed, he had quite recently heard an individual set up the claim, but in doing so he had simply shown that he did not know what pure gold is. The graduates of the late class were present, and also a number of the juniors; and they looked at us till we felt them silently saying, Were you lying to us the other day?

As we took it for granted that we were the individual he had recently heard, we defended our position and our teaching, pointedly, but very respectfully. He was offended, however, and, as long as he lived, he felt that he had been badly treated, frequently reminding friends of ours how unkindly we had acted in the matter. We could not apologize, as we had committed no offense; but we did all we could to pacify by explanation, and hope that a full restoration of good feeling resulted.

At the risk of being tedious, we call up other reminiscences.

Before coming into the dental profession we had not devoted much time or attention to metallurgy. The relative fineness of different specimens of gold alloys puzzled us. At least we found that we did not understand either how to estimate the "carat" of any given alloy, or to produce an alloy of any desired carat. Of course this was taught in books already written, but we knew not where to find them. We felt we could not do justice to the class as we were, and hence undertook to study out some simple and definite rules on the subject.

One night in February, 1857, we sat down to watch by the bedside of our little daughter, who was apparently near the gates of death. Being much exhausted we began to study "alloying gold," in order to keep from falling asleep. The result is found on page 196, Vol. X, of the *Dental Register*, which was given next forenoon as a lecture to the class. The entire hour was spent on these rules, working out various examples under each; and this class seemed more familiar with the subject than any we had seen before.

Many of our friends have promised to simplify, and shorten these rules, but they have not yet done so. They were published at the request of Prof. H. A. Smith. Prof. Richardson, in his work on *Mechanical Dentistry*, adopted them, giving due credit. As they have not been before the profession lately, we will here set forth at least some extracts from them, omitting quotation marks as the style is our own.

The quantity of gold under consideration is supposed to be divided into twenty-four parts, and each of these parts may be considered a carat. Hence pure gold is said to be twenty-four carats fine, or simply fine gold. If one of the twenty-four parts be a metal baser than gold, the alloyed mass is said to be twenty-three carat gold; if six of the parts are base metal, it is eighteen carat gold; if one-half is base metal, it is twelve carats, etc. By observing this, the whole thing is perfectly plain. For example, if we speak of nineteen carat gold, we simply mean that every nineteen parts of pure gold it contains are united with five parts of silver, copper, or some other metal that does not destroy the working property of gold.

In compliance with request we will give a few simple rules which we find convenient. We wish the principles on which they are founded to be understood, and then they can not be forgotten, while if these are not understood, they will not be remembered. The rules will be more readily comprehended by bearing in mind that twenty-four is the number of parts into which any quantity of gold under consideration is supposed to be divided.

Let us suppose, then, that it is desired.

1. TO ASCERTAIN THE CARAT OF ANY GIVEN ALLOY.

The proportion may be expressed as follows:

As the weight of the alloyed mass is to the weight of gold it contains, so is twenty-four to the standard sought. Take, for example, Harris's No. 3 gold solder:

Pure gold, 6 parts.
" silver, 2 "
" copper, 1 "
——
Total, - - - 9

The proportion would be expressed thus—9:6::24-16.

From this any one can deduce the following

RULE.—Multiply twenty-four by the weight of gold in the alloyed mass, and divide the product by the weight of the mass: the quotient is the carat sought.

In the above example twenty-four multiplied by six, the quantity of gold, gives one hundred and forty-four, which divided by nine, the weight of the whole mass gives sixteen. Hence, an alloy prepared as above, is sixteen carats fine.

As another example, under the same rule, take Harris's No. 1 solder:

22 carats gold,	48	parts.
silver,	16	"
copper,	12	"
Total, - -	76	"

Now, as the gold used is but 22 carats fine, one-twelfth of it is alloy. The one-twelfth of forty-eight is four, which subtracted from forty-eight, leaves forty-four.

The statement then is:

76:44::24:13.9.

This solder therefore falls a fraction below fourteen carats.

2. To reduce gold to a required carat.

The proportion may be expressed as follows:

As the required carat is to twenty-four, so is the weight of gold used to the weight of the alloyed mass when reduced. The weight of gold subtracted from this, gives the quantity of alloy to be added.

For example, reduce six ounces of pure gold to sixteen carats. The statement is expressed thus:

16:24::6:9.

Six subtracted from nine leaves three, which is the quantity of alloy to be added. From this is deducted the following

Rule.—Multiply twenty-four by the weight of pure gold used, and divide product by the required carat. The quotient is the weight of the mass when reduced, from which subtract the weight of the gold used, and the remainder is the weight of alloy to be added.

As another example under the same rule, reduce one pennyweight of twenty-two carat gold to eighteen carats.

As gold is only twenty-two carats fine, one-twelfth of it is already alloy. The one pennyweight, therefore, contains but twenty.two grains of pure gold. The statement therefore, thus expressed:

$18:24::22:29\frac{1}{3}$.

Twenty-four subtracted from twenty-nine and a third, leaves five and one-third. Therefore each pennyweight of twenty-two carat gold requires five and one-third grains of alloy to reduce it to eighteen carats.

3. To reduce gold from a lower to a higher carat.

This may be done by adding pure gold, or a gold alloy finer than that required. The principle of the rule may be set forth in the following general expression:

As the alloy in the required carat is to the alloy in the given carat, so is the weight of the alloyed gold used to the weight of the reduced alloy required. This principle may be practically applied by the following

RULE.—Multiply the weight of the alloyed gold used by the number representing the proportion of alloy in the given carat, and divide the product by that representing the proportion of alloy in the required carat; the quotient is the weight of the mass when reduced to the required carat by adding fine gold.

To illustrate this rule, take the following examples:

Reduce one pennyweight of sixteen carat gold to eighteen carats.

The numbers representing the proportions of alloy in this example are found by respectively subtracting eighteen and sixteen from twenty-four, The statement is, therefore,

$$6:8::1:1\tfrac{1}{3},$$

from which it follows that to reduce one pennyweight of sixteen carat gold to eighteen carats, there must be one-third of a pennyweight of pure gold added to it.

But, suppose that, instead of pure gold, we wish to effect the change by adding twenty-two carat gold. The numbers then respectively representing the proportions of alloy would be found by subtracting, in the above example, sixteen and eighteen from twenty-two, and the statement would be

$$4:6::1:1\tfrac{1}{2}.$$

It follows then, that to each pennyweight of sixteen carat gold, a half pennyweight of twenty-two carat gold must be added, to bring it to eighteen carats.

In revising the lecture so as to make it into an article for the *Dental Register*, some changes of expression became necessary, or, at least desirable. And if we add, here, the concluding paragraph of the article, as written then, it will illustrate the truthfullness of a sentence in Lindley Murray's parsing lessons, which reads thus:—" Time flies. Oh, how swiftly!" But here is the paragraph:—

" This article is written expressly for dental students and the younger class of practitioners. Many of the older members will, doubtless, laugh at it, and regard it as very *simple* (?) but they should remember that though it may be a long time since they were young, yet it is not long since we were, and, therefore, not long since we very much desired just the very simple information contained in the above."

That was true when first written; and it may correct a wrong impression in the minds of those of you who do not believe the editor of the JOURNAL ever was young.

Only a few more reminiscences will be alluded to, and one because of its amusing character. About the time the dental firm of Taft and Watt was formed, Dr. A. J. Watts began to make his crystal gold. (At first it was called "sponge gold," or "prepared gold," or something of the kind.) The new firm, named above, prepared some gold in a crystalline form, and called it "crystal gold." A very popular dentist, and one we then esteemed, and still esteem highly, made a charge that there was no such man as Watt belonging to the dental profession, and that Taft had found an outsider bearing the name, and was taking advantage of its similarity to the name of Dr. A. J. W. to introduce the gold. Of course he was not then acquainted with Dr. T., or he would have entertained no such thought.

We then, as now, explained the crystalization of gold as due to electro-magnetic force. This was warmly disputed. We met the renowned father in natural science, Prof. Elijah Slack, and asked him what is the agent or force in crystalization. He looked surprised, and said, "Why, my son, what a question! So many would ask thus: Dr. Slack, can you tell us some of the agencies in crystallization? Now a youth who can ask such a question does not need to be told that the agent is magneto-electricity. We felt somewhat encouraged if not vindicated.

We have not intended to intimate that the introduction of crystalline gold first suggested a reliance on the welding properties of gold in making contour fillings. We had seen such fillings made, with the gold carefully welded, yet the operators seemed to be all unconscious of what they were doing,—as unconscious as were the first gold leaf makers we conversed with, who were making full sized leaves from fragments, as already described, yet were not willing to call the process welding. They simply claimed that they pressed them together, and they adhered, thus making good leaves fit for sale. It is evident, however, that the use of crystal gold gave quite an impulse in the direction of contour fillings, for it was found so desirable that the foil makers soon had their foils as cohesive as any. The first mention of cohesive foil on record, was made by Dr. A. M. Leslie, in the Mississippi Valley Association.

Cohesive gold and the warm air syringe resulted in saving very many teeth otherwise doomed to complete destruction. Both these were invented because they were wanted, and they were followed by the rubber dam, introduced for the same reason. And now, if the use of these three were cut off, not many dentists would be willing to continue the business.

While residing in Cincinnati during an attack of illness, a very pleasant gentleman called to see us. He belonged to a firm in New York, extensively engaged in the manufacture of dentists' supplies. He had a specimen of crystalline gold, that presented a fine appearance. Not being able to sit erect, we told him where to find a specimen of our preparation. He remarked that it seemed too dense. We asked how much more so than his. He replied that he did not wish to injure our preparation, but he thought it was four times as dense. We assented, and asked if his were condensed by pressure to one-fourth its present bulk, would they not have the same specific gravity. He remarked that this was a truism. Then, said we, having equal distances to go in changing into solid gold, which would be found the most plastic or compressible. Yours, said he. There is no comparison in this respect. But why do not other chemists talk in this way? My father is a chemist, and popular, but he didn't talk in that way. We replied that had he been a practical dentist he probably would have done so.

We can not speak intelligently of Dr. James Leslie's gold, but as it is still before the profession, and in the hands of a metallurgist of such long experience, we presume it comes up to the claims made for it, of course making a little allowance for parental fondness, if not prejudice.

It is not probable that any of these preparations will supercede foil; for the latter admits a heavy per cent. of common, or unskilled labor in its preparation, while skill and science are demanded at every step of the process of preparing the former. This, and the unhealthiness of the business, made it impossible for the preparation of Taft and Watt to compete in the market.

This long article will give young dentists some definite ideas of the trials of their predecessors. And so many questions have been asked, by private letters, that we had not strength to spare to reply individually, and so we have taken this method for a general reply, which we hope will be satisfactory.

Correspondence.

"I charge you that this epistle be read."

THE DESTRUCTIVE ENERGY OF THE TINCTURE OF THE CHLORIDE OF IRON ON THE TEETH.

Dr. Watt:—*Dear Sir*—In this morning's edition of the *Tribune*, July 31st, appeared an article* by George W. Weld, M.D., D.D.S., New York, which is a reprint from the *Medical Record.* The title reads, "How Teeth are Destroyed by Iron."

While this article may be accepted from a technical and clinical stand-point, and may have no little testimony gathered from clinical tests out of the mouth, yet, considering the wide and general influence that it is likely to exert by appearing in such an extended and powerful sheet as the *Tribune* is acknowledged to be, as a practitioner, I do not feel that it should pass unnoticed. As the article has appeared in print several times, the influence is quite apparent that it is esteemed of more importance than is borne out by the facts, as they are being constantly observed in practice; and it can prove only misleading in a large degree.

How teeth are destroyed is a question of much import, and requires such breadth of observation and investigation that it can be only touched upon here; but I think it can be easily explained by a few plain common-sense deductions; and none of these need at all clash with the dictum absolute that presides in all law, chemical or other departments. But even more than this; the conclusions of the article, at least by inference, cannot be sustained against practical facts.

Decay of the teeth is of itself the result of chemical action, and many eminent practitioners agree with me in the idea that chemical action becomes what is now termed inflammatory action. This is associated, in my belief, with common air in a degree that does not apply to decay or caries of bone or osseous structures in other parts of the human body covered by soft tissue. Why it is possible for teeth to decay, can be answered in a word. They are, in a mass sense, imperfectly developed. This fact confirms the idea that what is commonly termed systemic disturbance is the beginning of it. Back of all this lies ancestral inheritance; these are presided over or controlled by function.

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*Reprinted elsewhere in this number of the Journal.—Ed.

Perhaps this is enough to prevent the public from being befogged. These statements are based on general principles that control the beginnings of physical life. It is a commonly accepted opinion that in our bodies there is going on a process of Nature which is called waste and repair. There is this fact before us to meet: that the teeth are an exception to this provision of Nature, so far as their external relations are concerned. Observations have not as yet revealed a process by which the teeth can be repaired as other tissues are; surgery alone meets this demand. This fact must be kept in mind, that the teeth are only parts of a complex system of organs, and are under the general influence that prevails in the system, and must be, more or less, affected by the deflections taking place in it. But, to use a plain and understandable expression, the teeth are more or less sick. Some are enough so to go into hospital. Thousands are able to sit up and be out attending to the common affairs of life. After the teeth come on the stage of action they are too often seized by environments of numberless varieties, these help to play merry mischief, and make it a struggle for their existence. These surroundings, which are in a large sense local, are constantly affecting hygienic or sanitary conditions, and opportunity is given to test the theory of the survival of the fittest. Together with these and the first named defects of structural development, a multiplex series of disturbances arise, which more largely disturb the general system; its tone becomes loosened; oxygenation, on account of enfeebled breathing, is decreased; function is impaired; general nutrition is checked; and thus the tissues go unfed.

I have presented the first step in decay, and acknowledge the auxilliaries that enhance the opportunities of more rapid destruction.

There is not room or time in this article to suggest what can be made effective in the betterment of structural development, and the sanitary conditions. Either one of these are fertile fields of interest, not only to the scientist, but for popular education, and I believe could be made profitable reading (in a newspaper, even.)

In two axiomatic statements, can be correlated the important deductions; that is, intelligent attention to embryonal conditions and a proper understanding of the hygienic state of the mouth and teeth; through attention the first raising the standard of opportunities in teeth and resisting decay, and through the second reducing the deteriorating surroundings through proper surgical and prophylactic treatment. In both these fields the scientist has entered upon the threshold of intelligent conservative practice.

Now, to return to the article under review; the inference that appears so emphatic, that teeth are destroyed largely by the action of iron preparations, as given by physicians, is one thing in the laboratory, and quite another thing in the mouth, where there are so many neutralizing conditions. A large number of statistical facts could be easily produced to show the barrenness of truth in the deductions of this essayist, and which would reduce the destruction of teeth by iron preparations to a surprisingly ridiculous minimum. I am confident that in my criticisms I will be sustained by the ablest practitioners that we have.

Let the great surging public rest quietly. This demon of destruction is only a lilliputian, and in quantity infinitesimal.

GEO. A. MILLS, D.D.S.,

NEW YORK CITY.

"AMMONIA"—CARBONIC ACID.

IN the August number of the JOURNAL, is an article by Dr. Geo. Watt, treating of the therapeutical value of ammonia.

This paper is, with one exception, the best that I have had the good fortune to peruse; and it is with the hope of advance that I venture to make a few notes.

Carbonic acid gas, CO_2 is produced by the complete combustion of carbon, or organic compounds in the presence of an excess of oxygen. In the air passages it is equivalent to ashes in a furnace. It is no further poisonous to the blood than from its occupying the room which should be kept for oxygen. In the analogue of the furnace, if our draught is not sufficiently strong to keep the fire free of ash, it collects and clogs the draught, preventing access of oxygen, and the fire deadens, the ashes do not put out the fire, they simply are the inert mass which prevents oxygen from coming to the fuel in order to keep up the combustion.

Carbonic acid, uric and other products, are results of the combustion, or the ashes of the body; and they are gotten rid of mechanically. The bladder and rectum being represented by the ash-pan of the furnace; and the lungs, with their appendages, by the chimney.

When movements of the body for the cure of syncope are insufficient to clear out the carbonic acid, we are compelled to resort to ammonia to break up the mass of carbonic acid into another form more capable of being handled, as the Doctor so very ably states. This may be termed a vigorous use of the poker, when shaking your grate has failed to free the fire of ash.

As an active poison in the system, we may consider carbonic acid as a myth. The red blood corpuscle brings the carbonic acid,—thrown off by the system, in action,—through the air-cells, and there discharges it by virtue of the magnetic attraction of the hæmatine, (for oxygen,) placed in the red corpuscle for that purpose.

When the oxygen enters the corpuscle, it mechanically drives out the carbonic acid, which passes from within, outwards, or from the corpuscle into the air-cell. If oxygen is not present in the air-cell—and to get there it must be respired—the corpuscles coming to the cells being already loaded with carbonic acid from the system, will pass on taking their second journey without benefit or injury; they simply suspend payment—of oxygen to the tissues—and as no business can be carried on without the circulating medium, the system lacking its circulating medium (oxygen) suspends, and death ensues. I think by this I have made it plain that syncope is not caused by the poisonous carbonic acid. WM. F. ATKINSON, D. D. S.

41 EAST 9TH STREET, NEW YORK CITY.

Compilations.

"Gather up the Fragments."

WINTER-TIRE.

It is a curious fact that the farther north we travel the hotter habitually are the interiors of the houses. At first thought it would seem natural that the temperature in which the person lives in the house should approach more closely that of the external air, but a little consideration shows the reasonableness of the habitual action of northern nations. The man who is exposed all day to a low temperature must produce an enormous amount of caloric in order to meet the demand and keep his body warm. At eventide he naturally seeks rest, not only for wearied mind and muscle, but also for the heat-producing function. It is not always remembered that energy is expended in maintaining bodily temperature, and that when an excessive amount of such energy is required, excessive exhaustion follows. The habitual excessive draught of the winter-time upon heat production is probably one of the reasons that in the early spring every one feels so relaxed and depressed. Of course, the general relaxation and lack of energy which has received the popular name of spring-fever, and which is supposed by many to be moral rather than physical, is due in part to the fact that the winter is, at least to many brain-workers and denizens of cities, the period of excessive toil. Nevertheless, it should be called winter-tire rather than spring-fever.

This relaxation of the system shows itself not only by the production of laziness, but also in manifestations of distinct disease. A good deal has been written in the course of the last decade concerning the fact that in children chorea is much more frequent in the spring than at other times, but our own experience is that in this respect chorea does not stand alone among nervous diseases. Neurasthenic conditions, hysteria, and all the minor or functional nervous ills which are connected with lowered nerve tone have come under our notice as a regular spring crop, and we think most neurologists will find that the months of April and May are those of greatest professional activity.—*Therapeutic Gazette.*

THE DESTRUCTIVE ENERGY OF THE TINCTURE OF THE CHLORIDE OF IRON ON THE TEETH.

An original paper of conspicuous merit, with the above title, was read before the Odontological Society of the State of New York, in June, by George W. Weld, M.D., D.D.S.

As the researches of Dr. Weld in this direction possess many points worthy of the careful consideration of every physician, the salient features of the paper are presented to our readers.

Dr. Weld declares that the clinical operation shows that water increases the destructive energy of the tincture of the chloride of iron upon the enamel of the teeth more than any other fluid, and, as an illustration, he states that the effect of adding water to a simple solution of the chloride of iron, *devoid of free acid*, is to give basic salts of iron and the separation of free hydrochloric acid.

Dr. Weld showed conclusively that the tincture of the chloride of iron of officinal strength had but little, if any, effect upon the enamel structure of a tooth when immersed in the same for a period of twelve hours; but that, when immersed in a solution of the tincture and water, in proportion of one ounce of water to one drachm of the tincture, the enamel was materially injured in five minutes.

As an illustration of this phenomenon the doctor stated that when a piece of zinc is immersed in strong sulphuric acid ($H_2 SO_4$) it has been observed that the acid has no effect upon the structure of the zinc, but if a little water be added to the acid, the zinc is at once destroyed; so that it is not entirely a matter of the strength of the fluids, so far as the quantity of iron or acid is concerned, but a matter of construction or solubility. The zinc in the strong sulphuric acid is protected in the same manner that the tooth which is immersed in the strong tincture of chloride of iron is protected, viz., the surface is blocked up with the basic salts of iron insoluble in alcohol, which prevents chemical action. In the case of the zinc, it is the sulphate of zinc resulting from the first action, and insoluble in the concentrated acid, that forms a protecting coat over the surface of the zinc; the addition of water dissolves the protecting sulphate, and renders further chemical action possible. In the case of a tooth immersed in a strong solution of the tincture a similar action takes place, viz.: the oxide of iron first formed protects the enamel from immediate chemical action on account of its compact adherence to its surface.

To illustrate still further, Dr. Weld called attention to two specimens of teeth* which had been immersed in the tincture and alcohol, and compared them with teeth which had been immersed with the tincture and water. Here it was observed that, although the alcoholic solution used contained the same quantity of the tincture and possessed apparently the same relative strength, and the teeth immersed for the same length of time, yet no injurious effects were produced on their lime salts. The reason is attributed to the fact that alcohol is a dehydrating compound, and the peroxide which is formed in the alcoholic solution is of anhydrous form, and in character very compact, adhering closely to the surface of the tooth, thereby preventing immediate chemical action; while on the other hand, in the presence of water, the peroxide, which is precipitated in the hydrated form and is flocculent in character, does not so well adhere to the surface of the tooth, leaving the free hydrochloric acid in the solution to unite with the lime salts with greater facility.

There appears, then, to be two forms of peroxide of iron, viz.: 1, the hydrated form ($Fe_2(OH)6$) found in the water solution, which is flocculent and non-protecting to the teeth; 2, The anhydrous form (Fe_2O_3), formed in the alcoholic solution, which is heavy and compact, and protects the surfaces of the teeth. The following formula will show how the hydrated peroxide is formed from the anhydrous peroxide ($Fe_2O_3 + 3H_2O = Fe_2(OH)6$).

Synonyms: Ferric hydroxide.
Hydrated sesquioxide of iron.

The teeth immersed in an ounce of the elixir of the pyrophosphate of iron, with one drachm of the tincture of the chloride added, for a period of twenty-four hours, produced apparently no chemical effect on the enamel; but with the same quantity of water and the tincture and the enamel was completely destroyed. The elixirs are composed of nearly twenty-five per cent. of alcohol, the presence of which, as observed in the strong solution of the tincture and in the alcoholic solution, affords a protection to the enamel of the teeth in the manner described. But it is to be noted that when a tooth is immersed in a solution of the tincture and simple syrup, in the above proportions, the enamel is but little affected. This is due to a mechanical reason, or a condition of fluidity of the solution, *i.e.*, the presence of the sugar in solution, coats the surface of the enamel, preventing the chemical affinity between the acid, or perchloride of iron, and the lime salts in the teeth.

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* A glass case presented to the Odontological Society, containing sixty-four teeth, showing with various modifications the destructive energy of different acids and iron compounds on the enamel.

The manner in which syrup modifies the destructive energy of the tincture on the enamel was beautifully illustrated by the effect produced in the specimens of teeth which had been immersed in three different weak solutions of phosphoric acid. Two of these were proprietary medicines and contained water, and the effect was to injure the enamel of a tooth in one hour; while the third, a syrup solution (each fluid drachm containing two grains of free phosphoric acid), produced but little, if any, injurious effect on the enamel in twenty-four hours.

Equally interesting was the effect produced on the enamel of teeth which had been immersed in a solution of the tincture and the weak alkaline waters (notably Vichy.)

When a drachm of the tincture is added to an ounce of the Vichy water, a slight effervescence occurs, indicating that the bicarbonate of soda contained in the water has neutralized a part of the free acid contained in the tincture; in consequence, when a tooth is immersed in such a solution, the destructive energy of the iron is, to a great extent, modified. Unless the specific nature of the tincture of the chloride of iron is materially affected (and the peculiar odor of the tincture remains), there seems to be no reason why this preparation of iron, at least in all cases of anæmia, should not be administered in combination with Vichy water.

There are, then, three menstrua which may be employed to modify the destructive energy of the tincture of the chloride of iron on the enamel of the human teeth. The first is alcohol in some form. The second is Vichy water which neutralizes to a slight extent the free acid contained in the iron. And the third is some form of an elixir or simple syrup.—*Medical Record.*

FLAME CONTACT, A NEW DEPARTURE IN WATER HEATING.

BY THOMAS FLETCHER, F.C.S.

A PAPER read at the meeting of the Gas Institute, London, on June 9th, of which the following is an abstract:—

It is my intention to prove to you on theoretical grounds, and also by experimental demonstration, in such a manner as will admit of no possible doubt, that the present accepted system of water heating, by gaseous or other fuel, is a very imperfect means for an end, and is, both in theory and practice, essentially faulty. My statements may appear bold, but I come prepared to prove them in a manner which I think none of you will question, as the matter admits of the simplest demonstration. I will, in the first place, boil a specified quantity of water in a flat-bottomed vessel of copper; the time required to boil this you will be able to take for yourselves, as the result will be visible by the discharge of a strong jet of steam from the boiler. I will then take another copper boiler of the same form, but with only one-half the surface to give up its heat to the water, and will in this vessel boil the same quantity of water with the same burner in a little over one-half the time, thus about doubling the efficiency of the burner, and increasing the effectiveness of the heating surface fourfold, by getting almost double the work from one-half the surface.

The subject is a comparatively new one, and my experiments are far from complete on all points, but they are sufficiently so to prove my case fully. As no doubt you are all aware, it is not possible to obtain flame contact with any cold, or comparatively cold, surface. This is readily proved by placing a vessel of water with a perfectly flat bottom over an atmospheric gas-burner; if the eye is placed on a level with the bottom of the vessel, a clear space will be seen between it and the flame. I cannot show this space on a lecture-table to an audience, but I can prove its existence by pasting, with flour paste, a paper label on the bottom of one of the boilers, and exposing this to the direct impact of a powerful burner during the time the water is being boiled, and you will see that it comes out perfectly clean and uncolored. Now it is well known that paper becomes charred at a temperature of about 400° F., and the fact that my test-paper is not charred proves that it has not been exposed to this temperature, the flame being, in fact, extinguished by the cooling power of the water in the vessel. I need hardly remind you that the speed with which convected or conducted heat is absorbed by any body is in direct ratio to the difference between its own temperature and that of the source of heat in absolute contact with it; and therefore, as the source of the heat taken up by the vessel is nothing but unburnt gases, at a temperature below 400° F., the rate of absorption cannot, under any circumstances, be great, and the usual practice is to compensate for this inefficiency by an enormous extension of surface in contact with the water, which extension I will prove to you is quite unnecessary. You will see I have here a copper vessel with a number of solid copper rods depending from the lower surface; each rod passes through into the water space and is flattened into a broad head, which gives up its heat rapidly to the water. My theory can be stated in a few words: The lower ends of the rods, not being in close communication with the water, can, and do attain, a temperature sufficiently high to admit of direct flame contact, and as their efficiency, like that of the water surface, depends on the difference between their own temperature and that of the source of heat in absolute contact with them, we must, if my theory is correct, obtain a far greater duty from them. I do not, of course, profess to obtain more heat from the fuel than it contains, but simply to utilize that heat to the fullest possible extent by the use of heating surfaces, beyond comparison smaller than what have been considered necessary, and to prove not only that the heating surfaces can be concentrated in a very small area, but also that its efficiency can be greatly increased by preventing close water contact, and so permitting combustion in complete contact with a part of the heating surface. I will now boil 40 ounces of water in this flat-bottomed copper vessel, and, as you will see, sharp boiling begins in 3 minutes 15 seconds from the time the gas is lighted. The small quantity of steam evolved before this time is of no importance, being caused partly by the air driven off from the water and partly from local boiling at the edges of the vessel, owing to imperfect circulation. On the bottom of this vessel is pasted a paper label which you will see is untouched by the flame, owing to the fact that no flame can exist in contact with a cold surface.

I will now take this vessel, which has only one-half the surface in contact with the water, the lower half being covered with copper rods, $\frac{3}{16}$ inch diameter, $\frac{1}{2}$ inch centres apart and $1\frac{1}{2}$ inch long, and you will see with the same burner as before, under precisely the same conditions, sharp boiling takes place in 1 minute 50 seconds, being only 13 seconds more than half the time required to produce the same result with the same quantity of water as in the previous experiment. Although the water surface in contact with the source of heat is only one-half of the first vessel, and the burner is the same, we can see the difference not only in the time required to boil the 40 ounces of water, but also in the much greater force and volume of steam evolved when boiling does occur. With reference to the form and proportions of the conducting rods, these can only be obtained by direct experiment in each case for each distinct purpose. The conducting power of a metallic rod is limited, and the higher the temperature of the source of heat the shorter will the rods need to be, so as to insure the free ends being below a red heat, and so prevent oxidation and wasting. There are also other reasons which limit the proportions of the rods, such as liability to choke with dirt and difficulty of cleaning, and also risk of mechanical injury, in such cases as ordinary kettles or pans; all these requirements need to be met by different forms and strengths of rods to insure permanent service, and by substituting in some cases a different form and type of heat conductor. To prove my theory as to the greater efficiency of the surface of the rods in contact with the flame as against that in direct contact with the water, I have another smaller vessel which, including the rods, has the same total surface in contact with the flame, but only one-third the water surface as compared with the first experiment. Using again the same quantity of water and the same burner, we get sharp boiling in 2 minutes 10 seconds, being an increase of duty of 50 per cent., with the same surface exposed to the flame. The rods in the last experiment form two-thirds of the total heating surface, and if we take, as I think for some careful experiments we may safely do, one-half the length of the rods to be at a temperature which will admit of direct flame contact, we have here the extraordinary result that flame contact with one-third of the heating surface increases the total fuel duty on a limited area 50 per cent. This really means that the area in contact with flame is something like six times as efficient as the other. If you will take two ordinary metal ladles for melting lead, cover the lower part of these with the projecting rods or studs and leave the other plain, you will find on melting a specified quantity of metal in each that the difference in duty between the two is very small. The slight increase may be fully accounted for by the difference in the available heating surface reducing the amount of waste heat passing away, and this proves that flame contact, and therefore quick absorption of heat, takes place on plain surfaces as soon as these are above a certain temperature, which, in a metal ladle, very soon occurs. What the temperature is which admits of flame contact I have, as yet, not been able to test thoroughly, and it will need some consideration how the determination of this is to be correctly made; at the same time it is a question in physics which should be capable of being answered.

When we come to boilers for raising steam, which have to stand high pressure, we come to other difficulties of a very serious nature, which require special provision to overcome them. I have found that rods or points, such as I have described, are not necessary, and that the same results can be obtained by webs or angle-ribs rolled in the plates. My experiments in this direction are not complete, and at present they tend to the conclusion that circular webs, which would be of the greatest efficiency in strengthening the flues, are not so efficient for heating as webs running lengthwise with the flue, and in a line with the direction of the flame.

I will now show you as a matter of interest in the publication of coal gas as a fuel, how quickly a small quantity of water can be boiled by a kettle constructed on the principle I have described, and to make the experiment a practical one, I will use a heavy and strongly-made copper kettle which weighs 6½ lbs., and will hold when full, one gallon. In this kettle I will boil a pint of water, and, as you see, rapid boiling takes place in 50 seconds. The same result could be attained in a light and specially-made kettle in 30 seconds, but the experiment would not be a fair practical one, as the vessel used would not be fit for hard daily service, and I have therefore, limited myself to what can be done in actual daily work, rather than laboratory results, which, however interesting they may be, would not be a fair example of the apparatus in actual use at present.—*Dental Record.*

THE BLOW-PIPE.

The first step is to procure a *proper* blow-pipe. This, unfortunately, is difficult. I have endeavored to get dental supply manufacturers to furnish such, but as yet without avail; why, I do not know. The blow-pipe furnished for dental use is the same used by jewelers, whose requirements are entirely different. They use much lower grade solders; small articles to solder, and not inserted, as a set of teeth must be, in plaster and sand, or asbestos. The small blast will suffice for them; dentists require a larger flame, and a stronger, fuller blast.—Dr. L. P. Haskell, in *Ohio State Journal.*

The above extract strikes us as rather old-fashioned. Perhaps the doctor has not learned of the improvements in power blow-pipes, or realized the comfort of a foot-blower. Blow-pipes are now made that control both gas and air jets perfectly, and perform their work expeditiously. We commenced using a mouth blow-pipe thirty years ago, but long since abandoned it for something that saved time, labor, perspiration and wind. We would as soon think of discarding the dental engine as the power blow-pipe. Verily "the first step is to procure a *proper* blow-pipe," and a dental supply manufacturer will furnish one of the right pattern every time; and it will not be an old-fashioned mouth blow-pipe either, but one that will supply a large flame and strong blast; and, when required, as fine and delicate a point of flame as is possible to make.—*Dental Advertiser.*

Editor's Specials.

"Write the Vision and make it plain."

ADVICE WANTED.

Many of our young friends, and even some not young, write to us for advice, to be sent by private letters, on subjects that we know less about than does the average dentist. We have said before that we are very sorry that our strength is generally too much overtaxed to allow us to respond. We can scarcely write a letter to tell an individual that we can't write. We are reminded of the Hon. Mr. Jones, who was teased for his autograph and replied thus: Dear Mr. Thompson: I dislike autographs and am sorry you seek them. I never give mine, and will not now; and, hence, write to tell you that badly as you may want it, you can't have it. Respectfully, J. JONES. We would take pleasure in answering all these letters, for "the spirit indeed is willing, but the flesh is weak." With a full and proper understanding of the facts, none will think hard of us, or feel slighted. If our present debility passes off a little, we shall try to respond to at least some of the interesting letters, but after such delay the replies are not likely to be practically useful. Napoleon Buonaparte advised to file away letters for two or three weeks, and not so many would require answers.

So many have asked our advice as to a selection of dentistry as an occupation for life, that we shall not try to answer any of them by private letter. We take for granted that the writers all read the JOURNAL, and if so, we can advise them all in a single effort.

In reference to the selection of dental surgery as an occupation, there is one very important consideration likely to be overlooked, and that is that the business requires the very highest degree of vitality, or vital force, if the term is preferred. A man can practice medicine long after age and general debility have unfitted him for dental practice. Let a young man become a dentist, and it takes often a term of years to get into a good practice. And not very long after he has become established, he finds that his right hand has forgot its cunning, and he must take secondary rank, to be soon laid on the shelf. Just at the age that a merchant, a manufacturer, or a breeder of fine stock is in condition to make his highest profits, from the most prosperous years of his life, the dentist must begin to retire.

And still more, the farmer, the merchant and the manufacturer makes money by hiring the help that others can give him, while the dentist must do his own work as a general rule. This is the more especially true of operative dentistry. A majority of patients are unwilling to accept the services of a hired assistant.

Dentists in full practice ought to bear these facts in mind as a guide in making their charges. The old adage tells us to make hay while the sun shines; but the dentist's period of sunshine is necessarily a brief one, hence let him improve it.

As to the desirableness of the occupation, it is pleasant enough. The dentist's patrons are mostly of the better classes of society. He can control the character of his patronage better than can the physician. He can decline to wait on non-paying patients when public opinion would not tolerate the physician in doing so. The dentist too, can have regular hours, and this is important too for health and comfort. The dentist's responsibility is almost nothing, as compared with the physician's, and he has almost nothing to try his patience, as have the physician and the minister of the gospel.

Upon the whole, we regard the practice of dentistry as among the pleasant occupations of life; but in view of facts stated above, we do not consider it very profitable. In these remarks we have aimed to give the young reader such light as will enable him to choose intelligently. This we trust will be more satisfactory than abstract advice.

EXTRACTING TEETH.

Extracting teeth is one of the lost arts. It was once practiced by physicians, blacksmiths, whitesmiths, the lazy, bold man of each neighborhood, and perhaps by a few others. The smiths gradually resigned in favor of the physicians, and these in favor of the dentists, while the hardy, neighborhood man ceased to be trusted by his neighbors. Thus the art settled in the hands of the dentists, and these have blotted—wiped it out of existence. At any rate, it is never mentioned at dental meetings; and if you make any inquiry concerning it, each dentist of repute tells you that he doesn't extract, he leaves that to the charlatans, and to those who cannot get filling to do. A few years ago, a member of the American Dental Association incidentally alluded to the fact that he had extracted a half dozen of teeth one day; and the statement caused so much excitement that we expected to see him expelled at once. No one seemed to think that possibly he was a kind operator, and that the patrons of others went to him for this dreaded operation.

Nevertheless, we advise beginners to get good extracting instruments, and to carefully study how to use them. Let them master each instrument separately, till they understand the reason of every curve and angle, till they can hold it firmly in the hand, leaving the muscles not in use perfectly at rest; till they can stand firmly and composedly on their feet, in a natural position, that would enable them to readily take hold of the organ to be extracted, in case, by any possibility, they have to extract a tooth. They may locate in some new, desolate district in which they will be expected to know how to perform such a trivial operation.

When the writer was a young physician, it was his misfortune to have tooth-ache, and it took some time to locate the cause of the pain. At last we found a pulp exposed by decay, at the posterior portion of the neck of the left upper second molar. The tooth appeared to be all right, while the first molar in front of it was dark colored, but sound. On horseback, a rainy day, in a dense forest, we found a cabin made of round beechen logs, with the bark still on. Red letters, the color of poke berries, on the smooth bark of a log, said, "Injian Rout Doctor." Calling him to the door, we said, Do you draw teeth? I extracts 'em, said he. Does that get them out the same as drawing? said we. Better, said he, A tooth may be drawed and still stay in; but when extracted, its out. I'll have one extracted, said we, hitching the horse. Sit on this log, said he. We obeyed, and he insisted on extracting the first instead of the second molar. We told him to proceed, or we'd use a beech limb on him. Said he, you're a big man. Now promise me if you're wrong you'll not do something rash to me while angry; for its the wrong tooth. We promised, he took a dirty red silk handkerchief out of his blouse pocket, rolled a corner of it around the fulcrum of his turnkey, and removed the offender with apparent ease. On asking his charge, he said I ort to have a bit, but a dime will do. We gave him two bits in the shape of a quarter and went on happy.

But the success of this ignorant man does not prove that the operation is a simple one. Often it is more difficult than the amputation of an upper or lower extremity, and ought to be paid for accordingly. It is mainly the fault of the profession that patrons expect to pay only fifty cents or a dollar for extraction. We saw a family, with coach and servants in livery, call at a dentists' office, in a country town. The elder of two women said, we have driven over a hundred miles since my daughter's tooth was broken off. Now if not absolutely sure you can take it out, don't touch it. A first lower molar had been broken off at the neck. The dentist took it out at once, and the patient said, "He's an old butcher. I never was hurt so in my life." The mother asked the bill, and being told a dollar, both women, with hands raised as in holy horror, exclaimed, What! a whole dollar, for only a piece of a tooth! The dentist proposed to extract a half dozen sound teeth without additional charge; but they hurried away, in all their crossness.

We suppose teeth will have to be extracted for sometime yet. A few hints may be of use to the inexperienced:

Never jerk a tooth. Let the extracting effort be steady, deliberate, and in the proper direction. A tooth will break off by a sudden effort that would come out, without trouble by following the above directions.

When some lateral force is to be used, let it be in the direction of the least resistance. The arm should be kept firmly against the side of the operator. If the elbow must be separated from his body, he is not in the proper position for operating, or the patient is not properly placed. The operation should be carefully and closely watched. A friend, in our younger professional years, often amused us by taking hold of the tooth to be extracted, and then turning his head away, to avoid seeing the unsightly operation; and for additional security, he tightly closed his eyes, while firmly gritting his teeth. When something gave way, he renewed his attentions to the patient.

But this is not intended for an essay on extraction, though we have been frequently solicited to write on the subject.

We are as glad as we can be that many teeth are now saved that, a few years ago, would have been sacrificed. And it is certain that such sacrifices can never take away sin; but the mere offer of them has been, in many cases, adding sin to sin.

If some one feels called to write systematically on extraction, the JOURNAL will be pleased to give space to his article, if found meritorious.

This is written "among the nineties," when it was dangerous to indulge in solid thought.

PLAIN AND POINTED.

At the late meeting of the American Dental Association at Niagara Falls, our special friend Dr. Morgan, is reported as making some quite pointed and practical remarks in discussing a certain report. He complains, and justly too, that the Association instead of getting anything new in the report, had to put up with a rehash of old, hacknied thoughts and principles. The suggestion of *heat* being the cause of local disease under plates for artificial teeth, was one thing of which he complained. In the discussion we had it that red rubber was the objectionable material, and that the substitution of black, gave complete relief. Again, that there was no difference; the black was quite as bad. Another found gold plates, if kept filthy, as bad as rubber, hence filth was the scapegoat to be led away into the wilderness of uncivilization. Again, retention of heat, by the non-conducting properties of the rubber, asserted itself; and thus the changes were wrung to the point of disgust, without even melody, to say nothing of harmony.

It is just possible that Dr. M.'s remarks, as we have them, may mislead. He almost denounces the idea that normal heat of the body can cause disease in its own tissues. This is correct. But if a non-conductor covers the roof of the mouth, thus preventing the normal escape of heat, the membrane may become heated altogether above the normal degree. And when food, especially the carbonaceous, as fats, sugar, or starch, are left to rot between the plate and the palate, heat is generated by the chemical action. Still, we must not be understood as claiming that heat alone causes the trouble. Our point now is that more than the normal heat of the body is likely to be present.

Unless the sections do their work before coming to the meeting, they will accomplish but little.

We have not, as yet, seen any good resulting from the formation of sections, that had not, hitherto, been gained by committee, and individual effort. The theory is good; and if the members would only work out the plan, in all its fullness, we would have something besides a rehash of stale mental pabulum.

Not being there, we may be mistaken; but as it is, we are inclined to think Dr. Morgan's remarks were timely.

LABARRAQUE'S SOLUTION.

This valuable and convenient disinfectant, bleacher, etc., is not duly appreciated, either by physicians or dentists. Druggists keep for sale what is in demand; and it is not uncommon, in a place with three or four drug stores to find it conspicuously absent from the shelves of all, or if on hand, so deteriorated by time as to be almost useless. Lately however, we have been quite fortunate.

When your patient has a very offensive breath, under a pretense of making the operation less unpleasant, put a very few drops of it into peppermint water, or even into cold water, and have the patient use it as a gargle; and you will find that you have done yourself a kindness.

If your own perspiration is offensive, as may be the case even with good care, a few drops of the solution will at once destroy the odor. Some have trouble with their feet, some with their armpits. Scarcely any of these odors need trouble any one, if he has this solution on hand.

We have told before how this acts as a chemical reagent. But it is probable that by trying to make this more plain and clear, we can induce some to use it who have as yet treated it with neglect.

The active principle in the solution is a salt called the hypochlorite of soda. Hypochlorous acid is composed of one equivalent each of chlorine and oxygen. These elements are both so highly electro-negative that they will not combine directly, and unless they are held together by combining the acid with a base, they separate spontaneously. Carbonic acid in the atmosphere and from other sources, takes the soda and that sets free the hypochlorous acid, and the oxygen and chlorine separate, and these two powerful elements, in their active state, are the disinfecting and bleaching agents. Thus it does double duty, the two elements having equal power.

At a meeting of the American Dental Convention in New Haven, the subject of bleaching came under consideration, and the enquiry was raised as to how chlorine bleaches, and a professor of chemistry present said that was a great mystery, for the liquid chloride of soda is the great bleacher, and it does not bleach as chlorine. But from the above it will be seen that though it bleaches as chlorine, that is but half the story, inasmuch as it bleaches as oxygen too.

THE PROPOSED DENTAL LAW FOR OHIO.

The text of the bill introduced into the last legislature was published in the Journal for May, 1886. It was read, we believe, the first time only and went over until next winter when it is expected that it will be acted upon promptly. The above in answer to inquiries.

OBITUARY.

Our friend and comrade, Dr. L. W. Nevius, of Toledo, Ohio, is bereaved by the death of his wife. His son and daughter are motherless, a word not definable except by the feelings of actual experience.

Though a great sufferer, and sorely tried, she knew in whom she had believed, and was persuaded that He was able to keep that which she had committed to Him, and was therefore content.

"Mrs. Viola J., wife of Dr. L. W. Nevius, was born near Fredericktown, Ohio, Feb. 8, 1849, and died in Toledo, July 28, 1886."

Dr. N. may rest assured that he has the sympathy of his brethren in the profession, and especially that of all connected with this Journal; and the "orphans' stay" will aid him in the care of his bereaved children.

The Diet in Diabetes.—*Articles permitted:* Almonds, plain, in rusks and in biscuits, bread toasted or stale, maccaroni, bacon, butter, cheese, eggs, fat and oils, beef-tea and soups, beef, mutton, fish, game, and poultry, cabbage, lettuce, pickles, and spinach, custards without sugar, cream, jellies unsweetened, nuts; coffee, cocoa, sherry. *Articles forbidden:* Peas, beans, lentils, potatoes, sweet potatoes, celery, carrots, beets, radishes, mustard, oysters, arrow-root, buckwheat, sago, tapioca, and puddings generally, apples, bananas, and fruits generally, including raisins; milk, sugar, chocolate, ale, sweet wines.—*Journal of Reconstructives.*

Societies.

"Wherewith one may edify another."

AMERICAN DENTAL ASSOCIATION.

TWENTY-NINTH ANNUAL MEETING, NIAGARA FALLS, AUGUST, 1886.

[Reported for the OHIO STATE JOURNAL OF DENTAL SCIENCE by Mrs. M. W. J.]

THE American Dental Association was called to order in its twenty-ninth annual session, on Tuesday, August 3d, at 11 A. M. The President, Dr. W. C. Barrett, in the chair.

The first item of routine business being the roll-call, the roll of 253 members in good standing, was called, and 104 found to be present at the opening of the first session.

Officers—President, W. C. Barrett, Buffalo, N. Y.; First Vice-President, L. C. Ingersoll, Keokuk, Iowa; Second Vice-President, A. T. Smith, Minneapolis, Minn.; Recording Secretary, George H. Cushing, Chicago, Ill.; Corresponding Secretary, A. W. Harlan, Chicago, Ill.; Treasurer, George W. Keely, Oxford, Ohio.

Executive Committee—J. N. Crouse, Chairman; A. M. Dudley, Secretary.

First Division—Committee of Arrangements—J. N. Crouse, L. D. Shepard, W. N. Morrison.

Second Division—On Credentials, Ethics and Auditing Accounts—A. M. Dudley, S. G. Perry, A. O. Hunt.

Third Division—On Voluntary Essays—C. N. Peirce, Geo. J. Friedrichs, A. H. Thompson.

Local Committee of Arrangements—S. A. Freeman, Buffalo, N. Y.; Geo. L. Field, Detroit, Mich.; J. W. Wassall, Chicago, Ill.

The reading of the minutes was dispensed with, as the published proceedings had been distributed to all members in December last.

The Secretary stated that at the last meeting a resolution was offered amending Art. IV of the Constitution, by changing the *time* of meeting from the first to the fourth Tuesday in August. He moved the consideration of that resolution as the first item of miscellaneous business. The mover of the resolution not being present, it was laid on the table, subject to be called up at any time.

On consideration of a further amendment of the same article of the Constitution, proposed at the last meeting by Dr. C. N. Peirce, leaving the choice of place of meeting to the Executive Committee, it was, on motion of the original mover of the resolution, indefinitely postponed.

Dr. A. H. Thompson offered a resolution amending Section 2 of Article VI of the Constitution, so as to allow members to join more than one section. After some discussion by Drs. Thompson, Dorrance, Fillebrown, Truman, Crouse, Marshall, Cushing and Allport, it was temporarily laid on the table.

Dr. Thompson said that the object was to permit permanent members to work in different lines, and not be confined to one section.

Dr. Truman thought delegates should also be permitted to join sections.

Dr. ——— explained that section work was the work of the year preparatory to the ensuing meeting, and was, therefore, the work of permanent members.

Dr. Crouse thought it useless to expect members to join two sections, as it was next to impossible to get them to work in one.

Dr. Thompson thought it would serve to distribute the workers over more ground. While there were many who did not work at all, there were some who would willingly work in more than one section if permitted.

Dr. J. S. Marshall thought there should be no restriction upon the field of work. A member might wish to offer papers in two sections, which the old rule prevents.

Dr. Geo. H. Cushing explained that it was stated in a footnote to the article which it is desired to amend, that voluntary papers may be presented to any section, the writer having access to the section for the discussion of his paper, though not given a voice in the organization of the section, or in the election of its officers.

The Executive Committee submitted the printed programme, as their partial report, which was accepted.

The Publication Committee reported that the Transactions of the last annual meeting had been published by The S. S.

White Dental Manufacturing Company as usual without cost to the Association; that the volumes had been substantially bound in cloth, and distributed to members in December last, a much earlier date than usual. They had also transmitted two MSS. copies of the Transactions of 1883 to the Public Library at Washington, as per resolution. They presented an itemized report of receipts and expenditures, showing a balance due the Committee of $21.40. The report was submitted to the Auditing Committee.

Dr. Metcalf, a delegate from the Michigan State Dental Association, asked the privilege of a few words of personal explanation. He said that he had several times been a delegate to the Association from different organizations. He was very much surprised, at this time, on presenting his credentials and fee, to be presented with a bill for unpaid dues for 1875 and 1876. That he had never been notified of any such indebtedness, or there would be nothing standing against his name. That he cared nothing for the amount, being willing, at any time, to contribute to the support of the Society, but he considered this an illegal claim, as he had never incurred any such indebtedness.

Dr. Crouse said that after a man had declared his intention of becoming a permanent member, he was indebted for annual dues from that date, and was dropped when they remained unpaid for two years. Whenever he came back to the Society, whether as delegate or permanent member, those dues should first be collected. That was the law of the body, which was sustained by the payment of dues.

The Treasurer, Geo. W. Keely, said that he fully understood his duties in the matter. That at the Minneapolis meeting several old members, who had been dropped for this cause, had paid $15.00 and rejoined the Association.

Dr. Parmly Brown said it had been decided by the Chairman of the Committe that, if due notification had not been given, there was no indebtedness.

Dr. Allport said that it really made no difference whether a man had ever been a member before or not, if he came simply as a delegate, he came by authority. Unless he signified his intention of becoming a permanent member, he had nothing to do with back dues. The Association was obliged to receive a delegate, if his credentials were correct, and he paid his five dollars.

Having once been an old member made no difference. He paid as a delegate only, unless he desired to become a permanent member.

Dr. Crouse said that no society had a right to send as delegate a man who was in debt to the Association. His credentials would not be accepted. No society had a right to dictate to the Association who it should admit as a delegate, if the rules were against him.

Dr. Allport said the only point was, could it be proved that he had declared his desire to become a permanent member. He would not be held as a permanent member unless he had so desired, and so declared.

Dr. Metcalf said he was sorry to have stirred up such a discussion. As far as the *legality* of the claim went, it had expired by limitation. There was no legal debt; but that was not the question. He was not willing to admit unjust claims.

Dr. Crouse rose to a point of order. The gentleman, not being a member of the Association, had no right to the floor.

Dr. Keely said he wanted the question decided. When the books came into his hands, he had found the dues for 1875 and 1876 charged against Dr. Metcalf, and had transferred them to his new set of books. He did not know it would be dropped unless paid.

Dr. Taft said that Dr. Metcalf did not know that he had ever been a permanent member, and there was no indebtedness on his part, unless the books showed that fact.

On motion, the matter was referred to the Committee on Credentials.

The Treasurer presented his report, showing the very satisfactory amount of cash on hand, $2,619.70. The report was accepted with applause, and referred to the Auditing Committee.

The President then read his Annual Address. This was a most appropriately worded address. He said it was neither his inclination, nor his desire to utter platitudes and commonplaces; neither to recommend tinkering the constitution; nor to discuss parlimentary usages, or to suggest by-laws, those necessary evils which hamper freedom of discussion, though dumb as oysters on technical matters. Men do not travel a thousand miles to discuss those notions. He said that he loved the Association, and desired to see it stand at the head of the scientific bodies of America. Its work should be such as to do honor to a dignified body of truly representative men, whose decisions were to be regarded as final, to be worthy of occupying such high ground, their transactions should be marked, not by self-assertion, but by culture, broad, deep and scholarly. They should discuss fundamental principles and laws. The discussion of elementary principles and technical trivialities should be left to primary bodies. We should throw off the shackles, and with great reluctance take up anything else, eschewing machine work and dental politics, wordy rhetorical pyrotechnics, and glittering generalities.

Too often the results of serious study, and deep thought were listened to with cold indifference, or read to empty seats, while the recital of amusing office incidents, or doggerel rhyme, turned the deliberations into mere farce. These things were unworthy the attention of an earnest body of men, discussing weighty, scientific problems. This was not an experience meeting, that was the work of local societies. At the last meeting a new departure was made in appropriating funds for scientific research by several sections. We were not a money-making nor a money-saving body, but the result of these appropriations were looked for with interest. He recommended a more careful consideration of the amenities of debate, avoiding all personal discussions, or whispering, or moving about during debate. Every remark should be addressed to the chair, not to other members. It is only by observing such rules as these that the meeting can be made successful in advancing the cause we all have at heart.

The address was received with applause, and, on motion of Dr. Dorrance, was placed in the hands of the Publication Committee and ordered spread on the minutes.

After due notice given of the time and places of meeting at the different sections for organization, on motion adjourned till 8 P. M.

FIRST DAY—EVENING SESSION.

8 P. M. The President in the chair.

Minutes of the morning session read and approved.

Dr. Thompson moved the consideration of the resolution amending Sec. 2 of Art. VI of the Constitution, which had been temporarily laid on the table, at the morning session. The amendment was read again, some verbal alterations having been made, and was unanimously adopted. This resolution amends

Article VI of the Constitution, so as to permit persons to join more than one section, and provides for announcing their choice by giving the name of their section or sections, at roll call, on the second day, instead of the customary "here," or "present."

The Sections were called to report, but none were ready.

A motion to adjourn was lost; and the roll of Sections was called a second time.

Secretary Thompson, of Section VII—Physiology and Etiology—reported a list of papers accepted by the section.

Section I—Prosthetic Dentistry, Chemistry and Metallurgy, Dr. W. B. Ames, Secretary, reported two papers, one from Dr. Wm. Truman, on *Vulcanizing and Vulcanizers;* and one from Dr Haskell, on *Needed Improvements in Mineral Teeth.* They called attention to several valuable papers published during the past year: to great improvements in carved porcelain blocks; to the more general use of continuous-gum work, due to improvements in small furnaces; to the great skill and ingenuity displayed in crown and bridge work, and in small appliances used in the mouth, as matrices and separators; to the removable bridge work of Dr. Stockton, which remedies the uncleanliness of permanent fixtures; Dr. Swasey's method of teeth on a gold band, instead of a narrow plate, giving greater stability than open clasps, and being more cleanly than fixed bridge work; also, the method of Dr. Melotte; to a special material for taking impressions, composed of potter's clay and glycerine; a fusible metal of 16 parts bismuth, 11 parts tin, and 6 parts lead; and an alloy for solder, reported by Dr. Dorrance.

After some debate, as to whether the report should, or should not be discussed before the papers were read, it was decided that the papers should first be read, that the whole subject matter of the Section, might be discussed, and dismissed.

Dr. Truman not being present, Dr. Ames read his paper, which was a discussion of the principles involved in the process of vulcanizing, and the merits of the Campbell New Mode Heater, the Seabury Vulcanizer, Cooledge Regulator, etc.

Dr. Haskell read his paper, defining clearly the Improvements needed in Mineral Teeth, in regard to size, shape, color, style, etc., in order to overcome the recognized difficulty in matching the natural teeth, where partial plates are worn. He said that he had been familiar with the manufacture of mineral teeth for over forty years, having for many years carved them for himself and for the profession. He briefly reviewed the history of the manufacture of teeth, and the gradual improvements introduced, n molds and coloring. He said that a large proportion of the teeth now carried in large numbers, were absolutely without value unless in exceptional cases, and were fit only to be broken up for the pins they contain. The very small molds should be given up, as well as the large horse teeth. In many molds the pins are too near the cutting edge, necessitating making the plate so thick as to impede speech. In bicuspids and molars the grinding surfaces are not broad enough. and there should be less difference in the length of the inner and outer cusps. Artificial teeth are not fastened in the head like the natural teeth, and allowances must be made for this; as with artificial teeth exactly like the natural teeth, the plate is liable to be misplaced in mastication. The ength and width of the anterior and posterior teeth are also disproportionate. Ash's English teeth are the only ones that are sufficiently dense to admit of grinding without making the surface porous and dirty. They can be reduced in size and shape, n any direction desired. For this reason, they are sold as fast as made. The sale of American teeth is very large abroad; yet English teeth are in great demand here. There is no reason why we should not have better teeth. We should be the educators n that respect.

Dr. Haskell moved the appointment, by the chair, of a committee of three, to confer with the leading manufacturers in that matter.

Dr. Dorrance then read a brief paper, in continuation of a former report of observations recorded, as to the injurious effects of plates of the vegetable bases, rubber and celluloid. His present observations covered five hundred cases. Leaving out the proverbial injuries from lack of cleanliness, or mechanical injury from badly-made or ill-fitting plates, the per centage of injury was fifty-five per cent. Substitution of metal plates was the radical remedy.

Dr. Dorrance read another brief report on the effect of base metals in alloys. Zinc in the form of brass contains antimony and arsenic, a very small quantity of arsenic making gold very brittle. As an alloy, he uses chemically pure metals, in the proportion of one of silver, two of zinc, and three of copper, the last being melted first. To replace pure gold, he uses as a base, from two to six parts, to one of alloy, using scrap gold of any carat, fusing together, and marking each bar with the number of carats of the gold, and the number of parts of alloy. The alloy is remarkably white, and the solder will follow the color of the gold used, whether red or yellow.

Report and subject open for discussion.

Dr. Sitherwood rose to second the motion of Dr. Haskell with reference to the committee of three, to confer with the manufacturers of mineral teeth.

Dr. Swasey and Dr. Boice thought that the Section had voted down that idea. Drs. Ames, Haskell and Harroun, thought it was recommended by the Section.

The President decided to appoint the committee.

Dr. C. N. Peirce said he had not understood whether the report of Dr. Dorrance stated the cause of the injuries done, whether it was attributed to the poisonous nature of the material of the plates, or to other causes.

Dr. Dorrance said that the injury was a diseased condition of the mucous membrane, which he attributed to undue retention of heat, which was not allowed to escape, owing to the non-conducting character of the base.

He had not taken into consideration the points of uncleanliness, or of bad fit, because he found the trouble the same with the mouth kept scrupulously clean, and with the most perfectly fitting plates. He thought too, that the coloring matter should be left out of consideration as not being a factor.

Dr. Peirce said he wanted to get at the cause of the well-known differences in results, of black rubber and red rubber.

Dr. Dorrance said that he had not been able to recognize that difference. He had tried substituting black rubber, but without benefit, while metal plates never failed to effect a cure.

Dr. Spaulding, (Minneapolis), asked if he did not find the mouth benefitted when a habitually dirty plate was kept clean.

Dr. Dorrance said of course that changed the character of the disease, but did not cure it.

Dr. Friedrichs, (New Orleans), said that if the per centage given were correct, of every one hundred persons wearing red rubber, fifty would have sore mouths; and ten millions of people were wearing rubber plates. If this were so, it would have been known before. Such a material would not have been tolerated. This shows the folly of such conclusions. They had no such foundation in the case of the man who had a gold plate put in, and had hemorrhage of the lungs two hours after. Of course hemorrhage was the result of the gold plate! If rubber produced such results, the fact would be patent to every one in the profession.

Dr. Ottofy, (Chicago), said that Prof. Black had been investigating this question recently, and his conclusions were very satisfactory. That it made no difference what the plate was made of, if kept clean. There would be micrococci under all plates. This point, if fully investigated, would explain every case. It rests entirely upon uncleanliness.

Dr. Geo. H. Cushing said the last speaker misrepresented Prof. Black. He did not state that diseased conditions were equally bad under all materials, but that we find microbes under all unclean plates; that rubber and celluloid afford better hiding places, but that all are alike when equally unclean.

Dr. Morgan, (Nashville), said that this section a year ago, had insisted upon having an opportunity for presenting their work; but that all that had been said to-night was a rehash of what has been said for years, and was based on the mere inference that the mouth eliminates heat, that the natural heat of the mouth is destructive to its own tissues. Then a diseased condition of the mouth is charged upon rubber, which is not universal. Then the statement was made that the same disease, and to the same extent, is found under metallic plates, because allowed to become filthy. The natural heat eliminated by the body, cannot be destructive to its own tissues, when in health. He had hoped that this section, having had a whole year to work on, would have offered something worthy of attention.

Dr. Truman, Sr., said that one branch of the subject—bridge-work had not received sufficient consideration. It was true that it was a mooted question whether it should be classed with operative, or with prosthetic dentistry, but, principles could be discussed here. Mechanical dentistry had been almost a lost art, and was now in a transition state. The best specimens of bridge-work are valuable as works of art; but they are going too far, and too rapid, in its introduction into the mouth. They do not sufficiently consider the ultimate result of placing these permanent bands upon the teeth, working on the teeth as if on an anvil, driving home bands below the gums, which the pericementum cannot bear. It is a violation of physiological law, inducing pathological conditions, which they will not be able to overcome. If the temporary use of the rubber dam and clamps produces the serious injury we see, how can the pericementum and the teeth bear that gold band continuously there? It is going too fast and too far, daily doing that which must result in permanent injury; the teeth will be loosened and destroyed. Principles must be thoroughly ventilated in the Association, if we would do good work.

Dr. Atkinson said it made him glad to hear a man speak of principles; but when bold statements of fact were made they must have a foundation. It was said that the periosteum was irritable and tender. Why it is well known that if there is a tissue in the human body that will bear abuse, it is connective tissue. The whole discussion is based on a lack of knowledge of principles. Crowns and bridges are inserted without any investigation of how much loss there is at the end of the root, or how much softening around the root, to know if it is all going to hold. We must hew to the line if the chips do fly in our faces. He had seen beautiful crowns placed on teeth, of which not more than one-fourth of the length of the root remained; but he was not against the practice of doing such work if properly done. We must get out of the slough of despond. When we make a diagnosis let it not be an *ig-nosis.* If we do not know its negative, we must hold to the positive, which we do know. Bridge-work is the *ne plus ultra* of replacing. I am willing to give up my best thought, or rather, what was not my best, but which was the best in the category at that time. I have five times outgrown what I believed to be my best thought.

The Committee on Credentials reported that further investigation showed that Dr. Metcalf did not owe anything to the Association, that he was entitled to come in as a delegate, and to elect whether or not he wished to become a permanent member. They found him credited for the year 1874, $5.00 paid, but the Treasurer's books were in some confusion, and he was not marked as delegate, so it was supposed he was a permanent member, and the subsequent two years' dues were charged. The books corroborated his own statements, except that he came as delegate.

He had never been furnished the volume of Transactions, nor served with notice of delinquency.

The chair announced the decision of the Committee as being briefly that as he had never been a member, there was no indebtedness on his part.

Dr. Rehwinkel stated that the Central German Association of Dentists was now in session in Germany, and moved that a telegram of greetings be sent, signed with the names of the officers of the American Association. Carried.

Dr. Geo. H. Cushing read a communication from the Librarian of the Patent Office, Chancery buildings, London, asking, at the request of a number of readers, the esteemed favor of the published Transactions of the Association. He stated that it would eventually prove of benefit to American inventors, as it was a free library, with two hundred daily readers, who were largely interested in scientific inventions and patents.

On motion of Dr. Taft, it was resolved to send as complete a set as possible.

On motion, adjourned till 9 A. M.

(To be Continued.)

AMERICAN DENTAL ASSOCIATION.

BUSINESS ITEMS.

[Reported for this Journal by Mrs. M. W. J.]

FOURTH DAY—FIRST SESSION, AUGUST 6TH.

Called to order at 9:20 A. M.

The President in the chair.

The minutes of the last session read and approved.

The President appointed, as the committee of three, to confer with the manufacturers of mineral teeth, as requested by Section I: Dr. L. P. Haskell, Dr. W. B. Ames, Dr. W. H. Truman.

Dr. Peirce offered a resolution that in the future this Association discountenance the giving of banquets, or other entertainments, during, or at the close of the meeting.

Dr. Marshall moved that this Association recommend to the various dental colleges that the interests of higher education demand that their sessions be uniformly extended to nine months in each year.

On motion of Dr. Kingsley, the resolution was referred to the Committee on Education.

On motion of Dr. Atkinson, Dr. E. A. Bogue was authorized as delegate from this Association to the British Dental Association, and the German Medical and Scientific Association.

Dr. Brophy announced that Sections II and III desired to be consolidated, making Section II, Dental Education, Literature and Nomenclature. Assent unanimous.

On motion of Dr. Ottofy, it was made the duty of the Committee on Credentials, to provide a book in which each delegate who wishes to become a permanent member, shall enter his name to that effect. Carried.

Dr. Marshall asked unanimous consent to make Section III cover pathology and surgery, eliminating pathology from Section VI.

Dr. Harlan, chairman of Section VI, said that was the desire of the section which was too large. It would facilitate their work.

Consent was given, and the new Section III organized.

There being no further miscellaneous business, balloting for place of meeting was the next order of business. The committee put in nomination Chicago, Ill.; Old Point Comfort, Va.; Asheville, N. C.; Asbury Park, N. J.; Salt Lake City; Chautauqua, N. Y.; Louisville, Ky.

Dr. Frank Abbott and James McManns were appointed tellers. During the balloting the usual speeches were made, each place named having its earnest advocates.

On the second ballot, ASHEVILLE, N. C., received a very large majority of votes, and was accordingly declared the next place of meeting.

The informal ballot for President gave Dr. W. W. Allport 49 votes, Dr. R. B. Winder 27, and many scattering. Dr. Allport having a decided majority, the informal ballot was made formal, and DR. ALLPORT was announced President for the coming year. Dr. G. W. McIlhaney, Columbia, Ga., was elected First Vice-President; Dr. T. M. Dennis, San Francisco, Second Vice-President; Dr. Geo. H. Cushing, Corresponding Secretary; Dr. A. W. Harlan, Recording Secretary; Dr. G. W. Keely, Treasurer, were unanimously reëlected to their respective offices.

Drs. Wardlaw, Perry and Guilford, were elected to fill the places of Drs. Morrison, Friedrichs and Perry on the Executive Committee, their terms of office having expired.

The resignations of Drs. Crouse and Peirce, from the Executive Committee, having been tendered and accepted, Drs. Darby and Harlan were elected to fill the unexpired terms.

The usual vote of thanks was tendered the hotels which had reduced their rates to delegates, to the press, for courtesies extended, to the railroads for reduced return tickets, and to all others who have assisted in making the meeting a success.

On motion of Dr. H. A. Smith, a resolution was passed asking the Southern Dental Association to meet in joint session with the American, at Asheville, N. C.

Dr. A. O. Hunt asked that the appropriations be renewed to Sections V, VI and VII, the same as last year, what had remained unexpended being covered back into the Treasury.

Dr. Marshall hoped the last point would not be carried, as Section VI had economized, with a view to having $400 to expend this year in carrying out plans which they had matured during the year.

The President decided that the appropriations made last year were for 1886, and not for 1887. That unexpended balance should be covered back into the treasury.

Dr. Sitherwood asked that not more than $200 be allowed Section II for the purchase of books for the use of the committee on dental literature.

Sections II and III not having reported, the roll of sections was called again, with no further reports.

On motion, it was resolved not to adjourn till final adjournment to meet at Asheville.

The final minutes were read and declared correct.

Dr. Barrett returned his thanks for the kind consideration he had met. It had been a great pleasure to preside over such a body. If he had made mistakes, as he felt he undoubtedly had, they had been of the head not of the heart. He had conscientiously endeavored to perform his duties in an honest manner. It would always be the pride of his life that he had been the President of the American Dental Association.

He appointed Drs. Taft and Frank Abbott to conduct the President elect to the chair.

Dr. Barrett then introduced Dr. W. W. Allport to the Association as its President, asking for him the same kind consideration he had received at their hands.

Dr. Allport said he was not unmindful of the honor conferred, nor ignorant of the responsibilities he assumed. He begged that all unpleasantness might be forgotten, and left with the past, hoping that nothing would be done but what would add to that professional reputation which constitutes much of the little each had to leave to his children.

As his first official act, he appointed as sub-Publication Committee, Drs. Darby and Harlan. As Local Committee, Drs. Douglass of Asheville, and T. T. Moore of S. C., and Bland of N. C.

The handsome ivory gavel which he had wielded so efficiently, was then presented to Dr. Barrett, and ordered suitably engraved.

The other officers elect returned thanks for the honor conferred, and the Association adjourned to meet in Asheville, N. C.

In this issue of the JOURNAL we give the transactions of the last day of the meeting. When a S. S. teacher was reading of David's contest with Goliath, the red haired boy of the class, in a whisper, requested her to skip, for the present, till we find which whipped. Recognizing a goodly portion of human nature in that boy, we copy his plan, to gratify those anxious to know "how it came out." We shall give the rest hereafter.—ED.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

THE National Association of Dental Faculties held its third annual meeting in the Park Theatre, Niagara Falls, commencing Monday, August 2, 1886, President C. N. Peirce, Philadelphia, in the chair.

The following colleges were represented :

Pennsylvania College of Dental Surgery.—C. N. Peirce.

Chicago College of Dental Surgery.—T. W. Brophy, A. W. Harlan, F. H. Gardiner, J. A. Swasey and L. P. Haskell.

Missouri Dental College.—W. H. Eames and A. H. Fuller.

Boston Dental College.—J. A. Follett.

Philadelphia Dental College.—S. H. Guilford.

University of Pennsylvania, Dental Department.—James Truman.

Baltimore College of Dental Surgery.—R. B. Winder.

Dental Department State University of Iowa.—L. C. Ingersoll and A. O. Hunt.

Dental College of the University of Michigan.—J. Taft and J. A. Watling.

Ohio College of Dental Surgery.—H. A. Smith.

New York College of Dentistry.—Frank Abbott.

Kansas City Dental College.—C. B. Hewitt.

The following additional colleges were admitted to membership:

Minnesota Hospital College, Dental Department.—W. A. Spaulding.

Vanderbilt University, Dental Department.—W. H. Morgan.

University of California, Dental Department.—S. W. Dennis.

Harvard University, Dental Department.—Thos. Fillebrown.

Dental Department of St. Paul Medical College.—L. W. Lyon.

Dr. Winder, chairman of the committee on text-books, reported verbally that so much opposition to the plan submitted had been expressed last year, that he had concluded to let the matter rest until this meeting, so as to get the views of all the schools possible. Since he arrived here he had learned that a much larger number of the profession were in favor of the idea than appeared at the meeting in Chicago. A work is being prepared under the editorial supervision of Dr. Wilbur F. Litch, but it is an encyclopedia of dentistry, and probably not what we shall require, which is a series of practical text-books. If there is a sentiment in favor of the movement to provide first-class text-books, the next thing to do is to go to work to get them up; but it is a task that cannot be hurried. Such a system of books would make the teaching in the different colleges uniform, and would put money enough into the hands of the publishers to insure the prosecution of the work. It would be a man of considerable temerity who would undertake the preparation of a work on operative dentistry, and the probabilities are that when completed the profession would have taken a step a long way in advance of its teachings. But we must have something, and the best thing we can do will be to get up the best we can.

After discussion, on motion of Dr. Guilford, a committee of five, consisting of Drs. Abbott, Winder, Ingersoll, Guilford and

Fillebrown, was elected to take the subject into consideration and prepare suggestions as to the general scope and plan to be followed in the preparation of a series of dental text-books.

Dr. Abbott offered the following resolution, which was adopted and referred to the Executive Committee:

Resolved, That a standing committee on schools be elected, whose duty it shall be to ascertain as far as practicable the workings of all dental schools in this country and Europe, and be required to furnish information to the dean or secretary of any college when desired, and to report in writing at each meeting of this association.

Dr. Truman offered the following, which was adopted:

Resolved, That the dean of each school be required to furnish the executive committee with the exact character of the intermediate examination, and whether any of them are final.

Dr. Truman offered a resolution that the winter terms of all dental colleges, of this association, shall be at least seven months in duration. On motion of Dr. Abbott referred to the representatives of the different colleges, with the request that they report upon it next year.

Dr. Guilford was appointed as a committee to codify the rules adopted by the association, and prepare them for publication in the annual announcements of the colleges.

Dr. Fillebrown, secretary of the committee on text-books, read the report, stating that in the judgment of the committee text books are needed on the following subjects: Oral Surgery; Dental Pathology and Therapeutics; Operative Dentistry and Orthodontia; Dental Chemistry and Metallurgy; Dental Prosthesis. Books on other subjects seem to be very well provided for at present. The report recommended that committees be appointed to solicit the writing of such books and to examine the manuscript and if found acceptable, to authorize their publication, as text-books on these subjects, with the indorsement of this association, that the publication of the various books shall be under the supervision of committees, composed of the professors in the colleges of this association, of the particular branch of study to which the book is devoted, or such persons as the faculties may select, that the committees shall have power to solicit writers for the subjects named, and to require the books to be written upon a plan acceptable to the committee, and that the final copy be submitted to every member of the committee, and unless it receives the approval of at least three-fourths of the whole committee, it shall not be considered approved; that each writer shall be expected to retain the complete ownership of his manuscript and to publish at his own expense and risk.

The report was adopted and the chairmen of the committees on publication were appointed, as follows: "Oral Surgery," T. W. Brophy; "Dental Pathology and Therapeutics," James Truman; "Operative Dentistry and Orthodontia," Thos. Fillebrown; "Dental Chemistry and Metallurgy," A. O. Hunt; "Dental Prosthesis," S. H. Guilford.

The following officers were elected for the ensuing year: C. N. Peirce, President; R. B. Winder, Vice-President; H. A. Smith, Secretary; A. W. Harlan, Treasurer; Frank Abbott, James Truman, J. Taft, Executive Committee; Frank Abbott, James Truman, R. B. Winder, committee to decide questions arising before the next meeting.

Adjourned.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The National Association of Dental Examiners held its fifth session in the Park Theatre, Niagara Falls, commencing Monday, August 2, 1886, President J. Taft in the chair.

The following State boards were represented: Ohio, by J. Taft, H. A. Smith and F. H. Rehwinkel; Illinois, by Geo. H. Cushing; Michigan, by A. T. Metcalf, F. W. Clawson and G. S. Shattuck; California, by S. W. Dennis; Pennsylvania, by S. H. Guilford, W. E. Magill and E. T. Darby; New Jersey, by Fred. A. Levy; Iowa, by J. T. Abbott; Maryland, by T. S. Waters; Louisiana, by Joseph Bauer; Indiana, by S. B. Brown; Wisconsin, by Edgar Palmer.

Officers were elected for the ensuing year as follows; J. Taft, President; H. A. Smith, Vice-President; F. A. Levy, Orange, N. J., Secretary and Treasurer.

Gold Solder.—$2.50 gold coin (U. S.) and 2½ grains each zinc and tin, make an excellent solder. We are indebted for the formula to Dr. J. R. Callahan, of Hillsboro, O., who obtained it of the Drs. Welch, Wilmington, O.

Our Aftermath.

Syphilis may be communicated through the medium of a spoon, a pencil, a cane, a cigar, a kiss, the dentists' instruments. "Nine cases of syphilis of the finger I published several years since as occurring under my own observation, and I have seen others since that time. Besides this, I have seen at least double that number of cases of syphilis where no possible trace of the source of contagion could be ascertained. A tumbler, or any article in common use, defiled with the secretions of a mouth, harboring a mucous patch, coming in contact with a crack or abrasion of the lips of a healthy person, may communicate syphilis through a resulting lesion which may pass away unnoticed. Any similar contact with the blood of a person in the active stage of syphilis will communicate it."—F. N. Otis, M. D. "*The Contagious Stage of Syphilis.*"

Professional Statistics.—The number of men in the three professions—divinity, law and medicine—was, in 1880, 254,520, of whom 64,698 were ministers, 64,137 lawyers, and 85,671 physicians and surgeons, 12,314 dentists, and 27,700 pharmacists. Hence, the proportion in the learned profession (so called) is about one to 200 of the population. The proportion of ministers and lawyers is very nearly equal, and is one to 782 of the population. The proportion of physicians and surgeons is one to 584, and of dentists one to 4,000.—*Journal of Education.*

New Hæmostatics.—Dr. Morales, of Barcelona, has found hazeline—an extract of witch-hazel—when locally applied, to act successfully as a styptic in hemophilic patients when all other means, not excepting the thermo-cautery, have failed. Dr. Morales is of the opinion that it acts by constricting the vessels as well as by producing coagulation. Dr. C. G. Rothe, of Altenburg, has discovered a reliable hæmostatic in the infusion of *urtica didica* (nettle).—R. B. D., *Cin. Lancet & Clinic.*

Magnetism and Diamagnetism.—Diamagnetism is a term introduced by Faraday in connection with his discovery of the influence of magnetic force upon all bodies. By a diamagnetic is meant any substance which, when placed in a field of magnetic force, does not conduct itself in the same way as the magnetic bodies, iron, nickel, and cobalt. Before Faraday's discovery in 1845, the known properties of almost all the diamagnetics in relation to magnetic action were merely negative.

Chewing Gum Exercise.—A Pekin, (Ill.) girl won a chewing gum contest by wagging her jaws six thousand times in sixty minutes.

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

Vol. VI. OCTOBER 1, 1886. No. 10.

Contributions.

"A word fitly spoken is like apples of gold."—Solomon.

AMERICAN DENTAL ASSOCIATION.

TWENTY-NINTH ANNUAL MEETING, NIAGARA FALLS, AUGUST, 1886.

[Reported for this Journal by Mrs. M. W. J.]

(*Continued.*)

SECOND DAY—FIRST SESSION, WEDNESDAY, AUGUST 4.

Called to order 9:30 A. M. The President in the chair.

Minutes of the last meeting read and approved.

The Committee on Credentials reported delegates present from the following organizations: Illinois State Dental Society, California Odontological Society, Dental Department of the University of California, Chicago Dental Society, Michigan State Dental Association, Mississippi Valley Dental Society, Odontological Society of Pennsylvania, Sixth District Dental Society of New York, Chicago Dental Club, Connecticut Valley Dental Association, First District Dental Society of New York, Louisiana State Dental Society, Brooklyn Dental Society, Eighth District Dental Society of New York, Minnesota Hospital Dental College, Georgia State Dental Society, Odontological Society of Western

Pennsylvania, Pennsylvania State Dental Society, Indiana State Dental Association, State University of Iowa Dental Department, Northwestern Dental Association, New Orleans Odontological Society, Pittsburg Dental Association.

THE HERBST METHOD OF FILLING.

Dr. Bödecker of New York then introduced to the Association the celebrated Dr. Wilhelm Herbst of Germany, who was welcomed with hearty applause. This representative of German dentistry is visiting this country for the purpose of giving to the profession his recently perfected method of filling teeth with gold. This system, which is known as the "Herbst Method," is the utilization of a new principle in operative dentistry, and has been experimentally used in this country for the last two years, but has never been thoroughly understood or appreciated until the present demonstration of Prof. Herbst himself. He calls this system his "baby," and says "I have brought my baby to this country to show it to you; if you don't like it I will drown it."

Dr. William H. Atkinson moved that Dr. Herbst be made an honorary member of the Association. The motion was carried by acclamation.

Dr. Herbst, speaking in German, which was translated phrase by phrase by Dr. Bödecker, briefly expressed his appreciation of the hearty welcome tendered him, which he said, he was too much moved to express in words.

Dr. Crouse of Chicago then introduced Dr. Bryant of Switzerland and several members of the profession from Canada, to all of whom the privileges of debate were tendered.

Dr. Watkins of Mont Clair, N. J., offered a vote of thanks to Dr. Bödecker, to whose efforts the profession owes the visit to this country of Dr. Herbst. The president in putting the motion said that any man who could come from abroad to teach Americans one point in dentistry was especially welcome.

The discussion of the subjects suggested by the reports and papers of Section I was continued.

RUBBER PLATES.

The effects of red rubber on the tissues was further discussed.

Dr. Horton said that as heat is evolved by friction, he thought Dr. Morgan mistaken in the assertion that there was only the normal amount of animal heat in the mouth. He thought the friction of the plate, from the pressure necessary for mastication, would increase the heat of the mouth, to the point even of inflammation and absorption. When there are antagonizing teeth, increasing the pressure the absorption is greater. He attributed the trouble to increased heat, due to friction, and not to the toxic effects of the coloring material.

Dr. John Allen described several cases of very serious, and even fatal results from rubber plates, attributing the disease to the large proportion of the sulphide of mercury and the sulphur in the material, the effects being persistent salivation and other phases of mercurial poisoning.

Dr. Kingsley objected to the introduction of individual cases, so clearly described as to be readily recognized. He thought principles rather than individuals should be discussed. He said that there were many sore mouths under black rubber, in which there was no mercury, but only rubber and sulphur, substances in themselves absolutely harmless as a base. The worst results he had ever seen were from rubber plates *made by somebody else*, which were left very rough on the surface next to the tissues, and which were inserted in the mouth with the upper surface just as it came from the flask, with all the roughness made by the plaster forced in during the pressing and vulcanizing processes. This was irritating in itself, and afforded a lodging for accumulations of filth and nastiness, being almost impossible to keep clean, and affording comfortable homes and abundant food for micrococci and all the rest of the bugs. He was not sure the sulphide of mercury would have any deleterious effects, but pure rubber, free from coloring matter (the corrugations from the rugæ and natural conformation left intact but the surface made otherwise smooth) if kept perfectly clean, as it could be if the patients were taught how, would not do any harm in one case out of a hundred. We have all experienced a shudder of disgust at seeing some plates taken from the mouth and put back again. But if plates are kept clean there would be no more sore mouths from rubber than from other materials. Rubber plates are generally badly made, because they are made for such low prices that good work cannot be put upon them, made in a few hours while the patient waits for them, instead of making them wait a week allowing time for careful work to be done. There is an idea too, that with wet plates, the rougher the surface, the better the adhesion, but it is dreadfully rough on the patient!

Dr. C. H. Land, Detroit, said there was one way out of the difficulty that had not been named: to brush the mouth as thoroughly as the plate. The mouths of his patients who wore rubber were as healthy as any others, because he taught them the necessity of friction and cleanliness. The trouble was due to want of use of the tissues. When the plate is left out the mouth is cured by the friction of the tongue and food. When the plate is worn continually there is no friction, but the friction afforded by the proper use of a brush upon the surfaces of the mouth itself would prevent all trouble.

On motion of Dr. Crouse, the subject was passed.

Report of Section II called for.

On motion of Dr. Brophy, unanimous consent was given to call for Section IV—Operative Dentistry—in order that Dr. Herbst might be heard from, as he was about to leave on an early train.

Dr. E. T. Darby submitted the report of the section, which was a review of the advances made in the last quarter of a century, in varieties of gold, especially cohesive foil and velvet cylinders; in the use of the mallet, hand and automatic; of dental engines, mechanical and electric; in the use of amalgams and other plastics, thereby saving a much larger proportion of teeth; in the use of the rubber dam, matrices, separators, etc., in the restoration of contour. The section had received no papers and but few appliances, among the latter, the "flexible band matrix," of Dr. T. W. Brophy, the "diamond drill," of Dr. Fernandez, and a matrix, by Dr. Swasey, serving as a rubber dam holder.

The Section not having any papers to offer asked the discussion of their report. Report accepted.

Dr. Melotte inquired why the clinic of Dr. Knapp was not embodied in the report?

The Secretary replied that their attention had not been called to it. That it was purely mechanical and did not belong to Operative Dentistry. He should have protested had it been offered to that Section; though highly artistic it was purely mechanical.

Dr. Morgan thought that was an open question. The preparation of diseased roots requiring therapeutical treatment belonged to Operative Dentistry, so that most "tooth-crowning" belonged to both. Bridgework also, necessitating preparation of the mouth was also operative or therapeutic dentistry.

Dr. Melotte said he would like to hear other expressions of opinion. This point was further discussed by Drs. McKellops, Parmly Brown and Kingsley, until Dr. Taft rose to a point of order, the subject of Nomenclature not being before the body.

THE HERBST METHOD AND A NEW OBTUNDER.

On motion of Dr. Fillebrown, Dr. Herbst was now invited to address the Association, which he did in German, Dr. Bödecker again acting as his interpreter. He described fully his methods of work, the principles on which it is based, and its superior advantages in the points of weight of gold inserted, close adaptation to the walls of the cavity, the perfect union of the different layers of gold, and the great saving of time required for the operation.

The discussion was somewhat informal, questions being freely asked and answered.

Dr. Herbst claimed that all that could be done by with the mallet could be done more easily, more rapidly, and more thoroughly, and with much greater comfort to the patient by his method when thoroughly understood. He did not either hope or expect that his method would ever replace the mallet in America—indeed it would probably be better for all beginners to rely upon the mallet for the finishing layers of gold—even in Germany when he had showed it to a great many of his confreres but little was as yet done with it. He said that there were in this country operators that the world could not reproduce; very great men who could do with their methods more than he had ever been able to do by any method, but he believed his method could do a great deal, and was more easily acquired by less skilfull operators than the use of the mallet. The one essential point was to be very particular about the first layer of gold introduced into the cavity. He was going away so soon it was not possible to show them anything more now, but there were some who had been with him more, and who, he thought, understood it perfectly, he trusted to them to explain it more thoroughly. He begged them not to throw it away without giving it a fair trial, for the comfort of both themselves and their patients. It would save both time and labor; they could accomplish more work and do it much easier.

He concluded by expressing the hope that he would meet them all again next year at Washington at the meeting of the International Medical Congress.

Several who had not been present at the clinics of Dr. Herbst in New York and Philadelphia, asked many questions as to the especial advantages and merits of the Herbst method, and in what respects it is better than the usual methods. The advantages claimed for it lie in point of more perfect adaptation to the walls of the cavity than is possible by any other method; the walls should be as perfectly smooth as possible, as is seen by the perfect success obtained by Dr. Herbst in filling glass tubes, which stand the test of examination with the microscope. Get the pieces of very soft gold into the cavity with tweezers, or hand plugger, no matter how so that it is held in place until, with a rotating pressure, it is driven into absolute contact. Herbst's fillings can be immersed in carmine or aniline solutions without showing the least discoloration between the gold or the wall—whether of tooth or of glass. The best malleted fillings will allow some percolation.

Again, it saves fully one-half the time necessary in ordinary operations, while, as a rule, the fillings which are the most difficult of the usual methods, become the most simple by Herbst's method and with his appliances. Patients who have once had work done by the Herbst method will certainly ask you for it again, rather than submit to the annoyance of the mallet.

Dr. Atkinson said that the exposition of the subject would not be complete until they had been given the obtunder, which as Bödecker could tell them, was a perfect success.

Dr. Bödecker said he would be very glad to tell them what he knew about the obtunder. Dr. Herbst had given it to him and showed him its effects two years ago, but he had felt he ought to be a little careful about it before daring to bring it out. He had in the meantime tested it, and found it perfectly safe. It was simply a little chemically pure sulphuric acid, saturated with hydrochlorate of cocaine, stirred with a glass rod until perfectly dissolved (which would also give a test for the purity of the cocaine—if the solution changed color, turning dark, there were impurities, as carbonaceous particles, etc., in the cocaine). When the sulphuric acid will dissolve no more cocaine add sulphuric ether until super-saturated, still stirring with a glass rod. It must not be shaken in a bottle as the expansion is liable to break it, or force the cork out, throwing the acid in the eyes. It is safest prepared in a long test tube stirred with a glass rod. If any ether remains on top it will evaporate by standing. A little is to be taken up on cotton and applied to sensitive dentine. The effect is more beautiful than anything else ever tried. It only obtunds one layer, and then another application must be made. The action is very nice and very prompt. It is not necessary to weigh or measure either the cocaine or the sulphuric acid. It will not take up any more than enough. The cocaine obtunds the momentary pain caused by the application of the acid.

Prof. Taft said it had been his privilege to be for three days with Dr. Herbst. With regard to this obtunder he would say it struck him as very peculiar, when the formula was first given. For his own satisfaction he had weighed and measured, and found that 1 drachm sulphuric acid would dissolve 30 grains crystals of cocaine. The amount of sulphuric acid was not important, as any over saturation would evaporate. He had used it daily for three months, and in every instance it had been successful. Its action was very simple as far as the process was concerned; the sulphuric acid dissolves a layer of dentine; acting as a caustic on the living tissues, the cocaine obtunds the pain of its action, the ether serving the same purpose. It should be applied after drying the cavity and before excavating. If the cavity is well formed there is no objection to leaving in the bottom the powder which will be formed by the dissolved dentine, which is sulphate of lime. The acid is satisfied with what it has dissolved and its action cannot go beyond that point. With regard to Herbst's method, it could not be understood from mere printed instructions, it must be seen to be comprehended. By watching Dr. Herbst or Dr. Bödecker operate we catch many ideas which would be of great assistance to any one even if without adopting the method exclusively. It is especially valuable for cavities when it is as desirous to make as little cutting as possible, or where there are no angles or depressed points for anchorage. Sometimes when a large mass of gold is rolled up and packed down, it is difficult to secure perfect adaptation at all points; when pressed down at one point, it will withdraw at another. Dr. Herbst takes a pellet of cotton which fills the mouth of the cavity; he goes all over the cotton with a rotary pressure, and when the cotton is removed, the cavity is found to be gold lined throughout, the adaptation being apparently perfect (though we should be very careful in using that word). If gold is rubbed down in this way on an engraved stone, the very finest letter will be found reproduced, showing the adaptation to be perfect. This one point only will amply repay the learner even if there were nothing more in it.

Dr. Marshall said that he had been a patient of Dr. Herbst's at one of his clinics, so that he could speak of his method from that standpoint. He had found it infinitely preferable to the mallet; he had not suffered one-half as much. He had plugged the crown of a molar, and a compound distal and grinding surface in a bicuspid. The pressure was very heavy, his jaws so ached that he had been obliged to support his chin. The pressing, drawing motion gave a very peculiar sensation, giving a sharp click as it came against the walls of the cavity.

Dr. Atkinson said that when Dr. Bödecker first wrote to him from Bremen about the new method he wrote: "I have witnessed something you will love." He then thought he did not need anything but the mallet, and it had taken him until now to really comprehend that there was something better. He had witnessed sixteen clinics, four of which he had watched all through, one being in his mouth so that he knew both ends of the instrument. He felt that he had had a revelation; there was nothing to equal it for the surface of a filling. He had tested it thoroughly and found it the hardest packed of anything he had ever seen. He had induced him to try 120 rolled gold, with which he made beautiful work both in the jaw and in a skeleton. He had also tried the platinum gold, and the irridium and gold for wearing edge, and had succeeded well with that also. He would only say, if you don't succeed, go to some one who has been indoctrinated, and you will cry *mirabile dictu!* He had feared there would be elimination of heat from the rapid rotation, but the rotation was rather slow, with a peculiar twist given with the thumb and fore finger. Any one who had once learned the method of hand pressure would readily acquire it. There was something quite startling at first, at the click of the agate point as it came against the edge of the tooth. If we never meet again, let me say to you, try it until you comprehend it, and you will not abandon it.

Dr. Marshall said that in the filling of the first cavity he had not experienced any sensation of heat, but that in the second cavity, whether from moisture or what not, the gold lost its cohesion and he had supposed it would have to come out, but Dr. Herbst took a heavy instrument and rotated it very rapidly until he had induced sufficient heat to restore cohesion, when he went right on with the filling.

Dr. Rehwinkel said that from a sense of gratitude to Dr. Herbst, and as a duty he owed the profession he would tell what he knew of the Herbst method. Three years ago he had the first intimation of the Herbst method through the German journals, a pamphlet handed him at the Ohio State society. Dr. Taft would remember going through the contents and reading a report of a clinic of Herbst's, at Frankfort-on-the-Main, he had exclaimed, "Hello, here's a new method, by rotation; rubbing in the gold; it is certainly fascinating in theory." Reading it over more carefully when he got home he had resolved to experiment. Guided by the descriptions he had begun with tin foil, not wanting to waste gold. Not having any standard of comparison he had pegged away at it, without knowing whether he was right or wrong. He said that Dr. Herbst had shown the greatest kindness and self sacrifice in bringing his method before the profession. He had almost gone from door to door in Germany to show it. Hearing of his liberality he (Rehwinkel) had "had the brass" to write to him and ask for specimens showing the work in various stages. By return steamer he had got a card saying he would comply, and a few weeks later he had received not only what he had asked for but far more—instruments, specimens in all stages of completion, matrices, etc. He was much gratified to find that we had not been so very wrong, but there still remained the question, would it be durable? Time alone could answer that. When Dr. Bödecker gave him an intimation of Dr. Herbst's visit he had come on at once, but he would not report what had been said about the clinics. He would only corroborate it. He agreed with Dr. Taft, that if for nothing but lining cavitives, and to prevent the showing through of amalgam fillings against thin borders, it was a grand thing. And in this way the gold lining must be painted with a weak solution of copal varnish to prevent the gold from being affected by the mercury of the amalgam. Dr. Herbst could do the work in one-fourth of the time it would take any other man. Using the word "perfect" in the general sense, the adaptation is perfect.

(Dr. Herbst held a brief conversation with Dr. Bödecker in German, when the latter said):

As Dr. Herbst is unable to speak your language, and interpretation is slow and complicated, he wishes me to give you briefly the general principles of his method, as he fears he may be miscomprehended.

One of the first principles is to convert every cavity into a simple cavity with four walls. There are ways and means of obtaining this in every case, by means of various matrices, of steel, shellac, wood, German silver, etc. These have been described in the *Independent Practitioner*. The gold is introduced the same as in any other method, but the cavity is prepared without sharp undercuts. Having the rubber dam and matrix adjusted, introduce large cylinders of soft gold and rub them down thoroughly with Herbst's hand-burnishers. If the gold doesn't stay in place readily, fill the cavity with cotton holding it steady so that it will not revolve under the instrument and rub down through the cotton. Remove the cotton and condense further with burnishers, the agates when admissable—they are rather large sometimes. The agate must be pressed very tightly against the gold, but does not require to be revolved rapidly, but moved from side to side as the engine revolves. Use an exploring instrument with a sharp point to detect any soft spots which must be recondensed. Then roughen up the surface burnished with the agate (an old broken point instrument is good for this purpose) which makes the next layer cohere better. In the last layers use heavier numbers of gold as the thin foils do not wear so well. The grinding surface must be left absolutely smooth. Dr. Herbst did not use the heavier foils but had tried No. 10 and liked it. Since he had come here he had been induced to try No. 30 and liked it so well that he now uses it for the grinding surfaces. Hand pressure will not condense No. 30 but is used to put it into proper position and then condensed with the agate or steel in the engine. In the last layer he uses a garnet tightly pressed with a great deal of force. It is surprising what a hard surface is obtained—has seen it so hard that ordinary shellac and corundum stone refuses to take hold of it.

Dr. Peirce said it had been his pleasure to witness these operations by Herbst. He felt thoroughly satisfied from the results that it must prove of great value to the profession; even if the older men do not adopt it, younger men who have more time to experiment will derive great advantage from it all through life. They should not be discouraged if first efforts should be failures. Herbst himself has been at it for seven years, but it is only within the last six months that he has obtained results entirely satisfactory to himself for a certain class of operations—contouring.

Dr. Watkins said that two years ago Dr. Bödecker had filled a large anterior proximal cavity in the third molar. The bloodstone was first used in that cavity. He was a very thorough masticator, and the tooth had shown itself thoroughly satisfactory.

Dr. Wattling introduced Dr. Bryant, Switzerland, who said that the method was found very acceptable, its superior adaptability being its great feature. Herbst's method of securing the matrix, forming a fourth wall was also a great point. He had experimented with various styles of matrices but had recently hit upon the extremely thin strips of steel used by watchmakers to support the pendulum. It could be cut with scissors like paper, and a hundred could be made in a very short time. It could be put where silk floss would not go, and was very adaptable in all cases.

Dr. Bödecker said that he had been using it for three years as a part of the Herbst system.

Dr. Bryant said he begged pardon, but he really thought he had hit upon something new.

Dr. Crouse said that like the rest of the Western men he had seen but little of the method yet, but was quite pleased with the specimens he had seen. He was not easily converted but he staid all the longer when he was converted. He was in methods as in his home—he did not like to change bedrooms. He thought it a somewhat extravagant statement that a corundum disk would hardly cut the surface, that would make it harder than glass and he could not conceive of such gold as that. He had found rather sharp undercuts in Dr. Marshall's mouth, and at one period of the work it did not stand the test. He then thought it liable to turn blue, but later on it was better, and was probably not finished at that point when he tried it. He could understand the enthusiasm of fine operators, but feared that in the hands of incompetent men it would prove a detriment. He said that his idea was that gold should be wedged in; that wedging was best to shut out moisture. He could not praise what he did not believe in. He should be sorry to believe that he had to begin all over again when he had spent twelve or fifteen years in learning his present method. He hoped to be able to retire before the end of another fifteen years. He did not like the matrix, and that was a very objectionable feature of the Herbst method to him. After the teeth had been separated or pressed apart and he was ready to make the contour, he did not want to put in a matrix; when the tooth was wedged tight against the next tooth it was difficult to apply a matrix. An expert might do it, but he thought he would have his filling made in less time than it would take him to get the matrix in position, and after he got it in he didn't want it. He had not seen anything yet to equal the very best work of the old process.

Dr. Morgan said we were yet in the infancy of our knowledge of the science of metallurgy. In early life he had spent sometime among gold workers. He learned that no man claimed to be able always to produce uniform results, even under exactly the same conditions. There is much about gold that we do not know yet. He said that we know that gold is hardened by friction but he was confident there was no condensation—no driving together of molecules. With the direct blow of the mallet we get condensation—when burnished back and forward we can get it very hard, perhaps from electricity, but we will not get the same results as from the direct blow.

Dr. James Truman feared that the obtunder mentioned would be productive of great injury. The dentine contains a prolongation of the pulp tissues, which is destroyed to that extent, and the irritation must eventually extend to the main body, this was the result of any escharotic applied to a sensitive surface. He was surprised to hear Dr. Taft endorse an application which he admitted would produce crumbling and disintegration. He felt that he must utter a word of warning against the indiscriminate use of such a dangerous agent, which would result in the destruction of pulp tissue.

Further questions from Dr. Bogue, Dr. A. O. Hunt and others elicited a repetition of the same details from Drs. Bödecker and Rehwinkel.

Dr. Bogue thought it was a return to the principles which governed the work of twenty-five or thirty years ago; the same old process, without a single new principle.

Dr. S. G. Perry said he had no experience in the new method of work, but even if it should eventually prove worthless we were indebted to Dr. Herbst for a preparation of gold which was superior to anything we had ever had. We could but admire the modesty and generosity of the man who came to us to give us his work, prepared to accept our verdict, and to throw it away if pronounced worthless; we could but give it a fair trial.

Dr. Fillebrown said the contest seemed to lie exclusively between Herbst on one side and the mallet on the other, as though there was no intermediate method ever used, but there are men who ignore the mallet quite as entirely as Herbst and his friends; men who, using only light hand pressure, produce results which resist all forces as well as malleted or burnished fillings, resisting the inroads of fluids, standing the tests of aniline dyes, etc., as they think even better than can be accomplished by any other method of operating. What is the object of condensing? simply to make the filling conform to the surface, and to break down all angles, and for this there is no need to hammer all the life out of it. His idea of a matrix takes the feather out of the caps of a good many; thanks him most sincerely and is going home to try it.

Dr. Taft said that in endorsing the obtunder, he spoke only of his own experience with it. He would also state that Herbst had used it for five years with the best results, so far no unfavorable results having been detected. The reasoning of Prof. Truman can hardly be borne out; its action was not so violent as his language would lead us to believe. Sulphuric acid had been used for years in alveolar abscess, and in various surgical operations; if its action was so violent it would be totally impracticable for the purposes named. It is an escharotic, but it destroys only the surface; there its action ceases, it reaches only one layer, and is not an agent capable of doing the mischief ascribed to it by Dr. Truman. My only fear is that some will refuse to use an agent which would be of great service.

Dr. Rehwinkel said that *veratria* was of great value as an obtunder, as follows: half grain of veratria, to three drops of absolute alcohol, to which is added tannin to saturation; then add ten drops of glycerine. Apply after the dam is in place and the tooth dry. It was, however, exceedingly poisonous.

Prof. Truman said he would only reply that an escharotic could not be placed in contact with dentine without disturbing the main body of the pulp. Dr. Herbst had a very different character of tooth structure to deal with; teeth of very dense character, while here teeth were of soft structure and such agents could not be used with safety.

Dr. Bödecker said he must correct that inference. Dr. Herbst had shown him teeth of very poor structure, (children of ten and twelve years of age, for whom he would under no circumstances have used gold,) which had been treated with this escharotic. They were found in perfect condition, the edges absolutely perfect, resisting every test. In one case the pulp had been exposed, but survived, as was proved by the ice-water test. He hoped next year, to show the effects in four of his own teeth, in which the obtunder had been used.

Dr. Morgan says there is no risk in using an agent when we know its limits. If we know it to be self-limiting it is perfectly safe.

Dr. Brophy said he had seen pulps devitalized by obtundents. We want to be very careful what we use, but only experiment can demonstrate what it will do.

Dr. Sitherwood said that as he understood it, the principal agent, sulphuric acid, was known to be self-limiting, and therefore would do no harm.

Dr. Taft repeated the formula, and explained again the formation of sulphate of lime in the cavity, an insoluble powder, beyond which the acid cannot act. It is satisfied with what it has dissolved.

Dr. Atkinson said that was where it differed from chloride of zinc, or arsenic. You never know when their action will cease; it may go on for months. Chloride of zinc acts as an obtundent by changing the pulp into hypochloride of albumen, as clear as glass, to the apex. He wished to speak to defend the man who cannot speak English He wished he could speak German, to tell him how much he loved him—not as a personality, for he praised no man, but for his principles; as a representative of the world of light and intelligence which gives us all that we have, if we will only put ourselves in the line of reception. I love the truth, which is no where so thoroughly embodied as among dentists; they are the very embodiment of light and truth, the sons and daughters of the Almighty.

On motion, adjourned.

SECOND DAY—SECOND SESSION—WEDNESDAY AUG. 4.

Called to order at 8:15 P. M. The President in the chair.

Minutes of the last session read and approved.

Discussion of Section IV continued.

NEW APPLIANCES.

DR. E. T. DARBY asked for a discussion of the appliances named in the report of the committee.

DR. MARSHALL described a little instrument, or tool, devised by Dr. Fernandez, for dressing corundum wheels and points—black diamond set in a piece of soft steel. The wheel being revolved in the engine is shaped and dressed as wood is turned in a lathe.

DR. BROPHY described his "flexible band matrix," made of very thin steel ribbon, similar to the same for dressing fillings. It is tightened to the tooth by a screw set with a watch key or a little wrench. It fits closely around the neck of the tooth, but being very flexible admits the introduction of gold with wedge shaped pluggers between the matrix and the cervical wall of the cavity, thus securing perfect margins. A special advantage of the band matrix is that all the gold is introduced in the direction of the roots, in horizontal layers. It also affords a posterior wall, when there is no posterior tooth, and it will pass when even floss silk will not go.

DR. S. G. PERRY exhibited his new hand-piece attachment, which, using the Bonwill engine, and the Hodge handpiece, by an arrangement of pulleys, etc., gives a steady, lathe-like motion. The arm of the engine is supported by a spiral spring which relieves the hand from all weight, thus combining all the advantages of the Elliott suspension and the Bonwill engines.

DR. WATKINS exhibited six instruments—three double-enders, designed to finish amalgam fillings in approximal walls, to prevent the projection beyond the cervical wall we so often find in fillings *made by some one else.*

Dr. S. H. Guilford, (Phila.,) exhibited, and illustrated on the blackboard, his band-matrix. It differs from all other band-matrices in that it only goes one-half or three-fourths around the tooth and is screwed to a bar passing over the crown of the teeth, having dipped-down ears to which the band is secured by screws. This matrix offers the advantage of surrounding only the carious wall of the tooth, allowing the tooth to be pressed close against the next one, without the intervention of those bands which enclose the entire tooth.

Section IV passed. Sections II and III not ready.

HYPEROSTOSIS OF ROOTS OF TEETH.

Section V. Dr. Frank Abbott, chairman of section five, on anatomy, histology and microscopy, read its report. During the past year, said he, but little had been done in the branches of work with which this section had to do, though important investigations were being pushed forward, the results of which would, in due time be given to the profession.

Dr. Abbott referred to his paper published in 1879, in which he attributed caries of human teeth to inflammation of the dentine ; a view which was opposed by many, on the ground that there was not sufficient living tissue in the dentine to permit of inflammation. He said that continued study had only the more firmly convinced him that his original position was correct, and that it was very gratifying to him to find it fully confirmed by the microscopical investigations of Drs. Bödecker and Heitzmann. He presented a paper entitled Hyperostosis of Roots of Teeth; with illustrations by Carl Heitzmann.

Under the term hyperostosis, he included all pathological growths of cementum, whether osteoma, exostosis or hypertrophy of cement.

As causes of the disease he enumerated irritation of the cementum through caries of the crown or neck, or from exposure of the pulp ; localized irritation of the cementum, as from gout, etc. ; irritation of the pericementum of upper teeth, from gravitation after loss of antagonizing teeth ; and the outgrowths of cementum. He said that tumors had been considered as the result of chronic irritation of the mother tissue, caused by local irritation; the theory of Colenheim was that they were the result of "misplacement of embryonal germs." He considered that such misplacement might occur without causing tumors, on the one hand, and that tumors were found which were not traceable to this cause, or the other. He raised the question—can abnormal formations of cementum occur after the death of the pulp, to which he gave a negative answer, based upon microscopical studies of the tissue, of which he presented very fine illustrations. From a careful study of a large number of specimens, he felt convinced that the teeth were sound, and the pulps alive when the bony growth was formed; in fact he doubted the possibility of an osseous new formation after the death of the pulp. Cementum, like bone tissue was undoubtedly built from medullary or embryonic tissue, the lacunæ containing living protoplasm, the canaliculi holding for tenants fibres of living matter; one portion of the protoplasm changing into a solid, glue-yielding mass, forming the matrix into which is infiltrated the lime-salts. There can be no augmentation of the cementum without a preceding augmentation of the medullary tissue, this being caused by increased nutrition or irritation. Bödecker has demonstrated that its whole basis-substance is traversed by a delicate reticulum containing threads of living matter, even pathological cementum being endowed with the same properties of life.

The different varieties of hyperostosis, as studied in over seventy teeth, were classified under four heads:

1. Circumscribed hyperostosis.
2. Diffused hyperostosis, with roots separated.
3. Diffused hyperostosis, with roots united.
4. Two teeth united through hyperostosis.

These four groups were again sub-divided:

1. *a* Osteoma on the body of the root;
   b Osteoma on the apex;

and vary in size from microscopic to the size of a lentil or pea.

This form (1) usually appears on teeth the crowns of which have been more or less destroyed by caries, with probably long-exposed pulps, and usually attributed to localized pericementitis.

In (2) the roots are affected without any symptom of disease upon the exposed portion of the tooth, the malformation probably dating from the beginning of the formation of the cementum. The hyperostosis varies from a slight deposit at the apex of the root, through all degrees, sometimes invading the necks of the teeth and even overlapping the enamel.

In (3) the variations are *a*, apices free and straight; *b*, free and curved; *c*, roots united their whole length; *c* is quite common, this being almost the normal condition of wisdom teeth. (4) is of rather rare occurrence. The teeth may be united either at their apices or at their middle, or there may be a complete union of the roots; at least one of the germs having probably malposed at the time of embryonic arrangement, the alveolar septum not forming at all; the mutual pressure from development of the roots causing the irritation which led to the new formation.

In the collection of teeth from which these studies were made, there was one exception to the rule that only bicuspids and molars are affected by exostosis, the specimen referred to being a completely united upper canine and lateral incisor, with only shallow furrows reaching to a common apex with a single large foramen, and evidently a case of fontal malformation. Microscopic examination of a section of teeth so affected showed the dentine in some cases normal, in some cases with the so-called interglobular spaces; in others, the canaliculi arranged in bundles with areas between nearly or quite destitute of canaliculi. At the junction of the roots the cementum is found in connection with an irregular formation or vaso-dentine. The hyperplastic cementum is often traversed by medullary canals carrying central blood vessels. Vaso-dentine presents to the naked eye a high degree of transparency, low powers showing a varying number of medullary canals. The canals and blood vessels are unquestionably in communication with the blood vessels of the pericementum. Mounted in glycerine, under very high powers, a carefully decalcified portion of hyperplastic cementum is found to be identical in structure with normal cementum, the canaliculi holding filaments of living matter, both normal and hyperplastic cementum, being a living tissue throughout, a slow circulation going on between the filaments of living matter and the basis substance, carrying nourishment to, and taking away effete material. Thus the pathological changes of a pathological tissue become intelligible, and cementitis of hyperplastic cementum may be understood.

It being very late, discussion of this valuable paper was postponed until the next session.

Adjourned to 9 A. M.

THIRD DAY—FIRST SESSION—THURSDAY, AUGUST 5.

Called to order 9:30 A. M. The President in the chair.

Minutes read and approved.

A NEW CROWN AND A NEW BLOW-PIPE.

Dr. Cahoon desired to say that when the Sec. I reported, the gentleman from New Orleans was engaged with his clinic and failed to bring forward his crown and bridge-work. They desired to make a supplementary report, if in order.

The President said it could only be done by unanimous consent.

Dr. Marshall thought the section should wait until called up in regular order, as other sections which had not reported were ready and waiting.

The objection being withdrawn, **Dr. Ames**, Secretary of Section I—Prosthetic Dentistry—read a supplementary report describing the crown and bridge-work of Dr. J. R. Knapp; gold crowns with porcelain faces, capable of giving artistic results in the hands of a careful and original operator. Also his blow-pipe, using compressed nitrous oxide gas, combined with illuminating gas—really a compound oxy-hydrogen blow-pipe.

Dr. Knapp was called upon to describe his inventions but declined to take the floor, saying he could add nothing to what he had showed in his clinics.

Dr. Kingsley said he admired the retiring modesty of the young man; he had been a modest young man once himself, and knew what an effort it was to address a body of learned men. As he was too diffident to tell what he had, and as all had not seen his clinics, he would say for him that, in his opinion, Dr. Knapp had invented and discovered a system of bridge and crown work, which would to a certain extent, revolutionize that branch of dentistry. That some affected to ignore prosthetic dentistry, and sneer at it as mechanical, but that filling a cavity was as entirely mechanical as anything in so-called mechanical dentistry. That his discovery of the combination of nitrous oxide gas with illuminating gas, gave a blow-pipe of such wonderful capacity that results could be accomplished with an ease and accuracy hitherto impossible, making the most difficult work a marvel of facility. He does not make his crowns on any stereotyped model, but each one is carried out in wax to suit the individual case, and struck up with dies and counter-dies, having perfect adaptation to the root and occlusion with the opposing tooth.

Dr. Abbott said that he had examined specimens of the work, and seen the blow-pipe in operation, and the results were both astonishing and delightful.

Section II passed.

The Committee on Credentials reported delegates present from the following bodies: Vicksburg Dental Association; Wisconsin State Dental Association; Fifth District New York Dental Society; Alumni Dental Department University of Pennsylvania; Northern Ohio Dental Society; Susquehanna Dental Society; New York State Dental Society; Kentucky State Dental Association.

Dr. Atkinson said he had not yet heard the name of the Society represented by Dr. J. R. Walker, of New Orleans. That he understood his credentials and dues had been accepted, but had been returned to him because of the action of some local society—charges which had not been investigated or proved; that by the laws of the United States every man was considered innocent until proved guilty—that it was not the place of this body to ignore the laws of the United States; that it was a small business for this Association to take up and prosecute local quarrels. That he had known Dr. Walker as an efficient working member of the Association from its very inception and organization in 1859; that he did not like to see such men excluded because of the petty malice of dudes and cranks. Men who were worthy of honor should be received irrespective of local bodies.

Dr. Crouse said the Committee on Credentials was competent to attend to its own business; that they were acting on information received, and were competent to reject, on evidence submitted to them. That the only way to keep right and square was to work up to the law of the Constitution. Did Dr. Atkinson want them to violate the laws which had been found to work efficiently?

Dr. Atkinson replied that he did not wish any laws violated.

The report was accepted.

Dr. Peirce reported that the Committee on Voluntary Essays had received two papers, one of which had been returned as incomplete. Of the other they recommended the publication of certain portions, the paper being too long to be read as a whole.

Dr. Taft thought that if the paper was a good one, the Association ought to hear it. That persons would not continue to devote their time and labor to the preparation of papers, offering matters of information and profit to this body, to have them cast aside in this manner.

Dr. Kingsley thought that it should be definitely accepted or rejected by the Association. It was not fair to mutilate a paper. It should be returned to the writer, if not acceptable to the society, as a whole.

Dr. Atkinson said the Publication Committee was supposed to have the brains and heart to do the clean thing, in deciding what should be published, but they were not expected to accept drivel *ad nauseam.*

Dr. Thompson said that the powers of the Committee on Voluntary Essays was limited as to what should be read. The Committee on Publication then decided whether to publish what had been read, in full or in abstract.

The report of the committee was accepted.

Dr. Ingersoll moved the adoption of a standing resolution that it be the duty of the Executive Committee to provide at each annual session, a Register, when each member would be expected to enroll his name, place of residence and hotel; also visitors to the hall. Adopted.

Discussion of Section V.

HYPEROSTOSIS—DISCUSSION.

(Calls for Atkinson.) Dr. Atkinson said this was the only section in which clean work could be done. He spoke of the value of the study of pathology, solidal, humral or fluid, cellular, and pragmatic pathology, and the effects of unseen elements which work insiduous changes inside and outside of cells. We wanted to clear away all irrelevent matter and endeavor to comprehend how certain changes take place. He considered *hyperostosis* doubtful nomenclature; it should be hypercementosis. We want to get at the mode of arrest of radiance that operate all these things in pathology. We can't see the molecules, no powers of the microscope can reveal them. Molecules and atoms are ideal bodies, serving as crutches to help the mind to grasp what it is that in combinations only become perceptible to our senses. If there were time he would like to go through the paper, stripping off all the fuss and feathers, and pointing out what was worthy of attention—then "I might bless you and be blessed myself." He did not consider that, as a body, they were sufficiently versed in histology for it to be profitable to them that he should go into it deeply; but doctrines were pronounced settled, that were mere hypothesis and assumption. It was an assumption not proved, that the predisposition dated from *in utero*, and could only proceed during the life of the pulp; it could not be proven that it was otherwise than potentially resident in the tooth germ. It required new energies to increase the deposit of protoplasm, and deposits of lime salts to make it visible as we see it. He had seen teeth with ten, twelve, or fifteen distinct laminæ of cement corpuscles laid on fusing adjacent teeth, as many as five in one solid phalanx. This could not have occurred before eruption, the line of biting surface being in perfect opposition. We have had glimpses of law and begin to understand that want of use *raises hell*, in the shape of gout, cancers, tubercles, etc. Want of use induces waste of misspent energies; it does not order deposits of lime salts to unite with other teeth. The so-called peridental membrane leads us into trouble again, as in expecting reproduction of bone if the periosteum is saved—the periosteum is not a bone producer—that is the function of the osteoblasts. We justify one error by another; we need to do in intellectual growth as in physical—take in a breath, steal from it what we want, blow the rest out again and never see it any more. Mere deductions should not be made to a body of men less endowed in these matters. The tissues all come from an endowment entering beyond the range of our senses. We should not ask *why?* we should ask *how?* We can only see what has been done—we can only find the tracks left by the doer.

We say arsenic does certain mischief. Arsenic was only the vehicle; there was an energy behind that caused it to do its work. Arsenic has no affinity for the tissues. It is a metal, and must be oxidized—the metal is turned to a salt—the molecules have an affinity for the oxygen in the oxide, a disruption of molecules takes place and the poison comes in. Mercury follows the same law. The law of nutrition is also operated by a type behind it.

A committee which could not understand what I said in my paper "Ripening and Ripeness," wrote their own shame on the back of it, and wanted to kick it out. If I knew this to be the last word I had to say, it would be—Obey the cause of righteousness in your own minds, and never violate your consciences in the least thing. Walk in light and wisdom, in the excellence of knowledge as presented to this body.

(The time of Dr. Atkinson was twice extended, for the reception of a genuine *Atkinsonian inspiration*, of which it is impossible to give even an outline.)

Dr. Thompson asked if there might not possibly be a nodular idiosyncrasy in some individuals, causing thin deposits on bones and teeth?

Dr. Atkinson offered "a Delmonico dinner, and a pair of clean sheets and a week's lodging" for the first genuine case of hypertrophy, or exostosis of a tooth that has never lost its occlusion.

Dr. Wells said that this offer was too good not to be taken up. That he had an instance in his own mouth, for which Dr. Fuller could vouch as he had extracted the tooth, to relieve his suffering. The tooth had proper occlusion, but was hypertrophied.

Dr. Atkinson said there two modes of physiological action—hypernutrition, as in the cases illustrated, and the removal of layers of cement, as seen in the pointed teeth of aged persons.

Dr. Ingersoll commended the paper as high toned, and in the right direction; an investigation in fields comparatively new. It was a subject not generally understood, but which it would do all good to consider. The phrase *inflammation of bone* was a familiar one twenty-five years ago; it was discarded because not understood. Sensitive dentine is not necessarily a pathological condition; there was a pathological sensitiveness which did not imply inflammation. With this understanding, the term inflamed dentine is correct. The objection is raised that inflammation implies vascular activity, and the question arises, is there a vascular system in dentine? There are various phases or stages of inflammation, and all do not have the same mode of manifestation, but differ with the character of the tissue. There is no vascular tissue in cartilage, but there is genuine inflammation, vascular supplies being borrowed from surrounding tissues.

It has been said that as blood cannot enter the dentinal tubuli there can be no inflammation; but this does not necessarily follow. As there *is* nutrition there *must be* circulation, and consequently the other processes of vascular action, including inflammation. Exposed dentine is not in a pathological condition until it is inflamed. Exposed healthy fresh pulp is free from pain, until from irritation the condition becomes pathological; with inflammation there is pain. The old pathologists said that teeth were simply bones. Modern dental science teaches that neither in chemical constitution nor in structure are bones and teeth identical, but one portion of tooth substance is bone; though even cementum is not identical with bone: it is modified bone tissue. He thought that hypercementosis was a better term than hyperostosis, and excementosis better than either, as distinguished from exostosis. He would look upon it as tumefaction, rather than hypertrophy. This may be hypertrophy, or pathological irritation—the terms are not synonymous. There is normal excitation but not normal irritation. There may be physiological cementosis, and there may be pathological excementosis. The one is healthy and normal, the other is abnormal and unhealthy. We accept the theory of inflammatory action in dentine, it becomes another factor in the study of decay. The process of nutrition, of construction and destruction, of inflammation, are analagous throughout the body when the tissues are analagous. Dentine and bone are constructed on the same plan, except that dentine is tubular, while bone is cancellated tissue, but in the medullary tissues of both the processes of inflammation are the same. The swelling of inflammation in bone is at the expense of the walls of the cancelli; in dentine the dentinal fibrils swell at the expense of the walls of the canaliculi; the result in both is softening of the hard tissues. In what we call demineralized dentine, the tubules are broken down by the expansion of the fibrils. We have here another factor in decay. Germs and acids are not all—inflammation aids in the work.

Dr. Morgan said he would accept most of the statements made in the paper, but not the inferences. He could not admit that hypertrophy, or increase of cementum never occurred after the death of the pulp. The functions of the membrane would continue so long as the membrane was healthy, and were not affected by the death of the pulp, not having any connection with the latter, he did not see how the death of the pulp could affect the functions of the membrane, to which alone was due any increase of cementum. He felt compelled to take issue with some points made by Dr. Ingersoll also. In general surgery there was healing by first intention, without inflammation, though there might be greatly increased sensibility from increased circulation. He believed the teeth to be somewhat analagous to other structures, and that there might be in the teeth, efforts of nature to repair loss of substance, with healing by first intention, with increased sensitiveness, though without inflammation. He understood Dr. Ingersoll to say, there was never decay without inflammation.

Dr. Ingersoll asked to correct this point, in which he had been misunderstood. He said that misunderstandings arose from confused use of terms. Some understood by inflammation all of its phases; some would require only redness and heat as essential; others, as Strücker, always included suppuration, but irritation was as much inflammation as suppuration, it was one of the phases or stages. Before we have healing, we have irritation. One man says no inflammation when he really means no suppuration. In healing by first intention there is no loss of tissue. In healing by second intention there was loss of tissue and restoration of parts.

Motion to pass the subject; calls for Abbott! Abbott!

Dr. Abbott said that it was possible that we should never know anything positively about the very beginning of tissue formation, but it was his own opinion that no deposits of cement on the roots of a tooth could take place unless *all* its functions were in working order; if the pulp was dead it would destroy the function of the pericementum. The effect of the absence of antagonizing teeth was another question. One gentleman states positively that such action has taken place. Dr. Taft tells of a case where the antagonism was perfect, and yet great nodules formed. There may be a condition of the system which would induce such action. If this is so Atkinson owes that dinner! and he will pay it—he is paying all the time. He believed it might exist, though he had never seen it himself. His own idea was that when the antagonizing tooth was lost, gravitation alone would create sufficient irritation to cause the increased deposit. The preparation of the specimens and the illustration which formed the basis of his paper had involved an immense amount of labor, but only in this way could facts be ascertained. No man claims to know when the growth of the cement on the roots began. The teeth cannot be taken out one after the other to ascertain this. We only get the teeth after death, or after they have been removed, and then the growth is found, if there. The subject of inflammation, whether of the tooth or otherwise, he hoped some one else would take up where he had left off. He had taken one side —let some one else take the other.

Subject passed.

The Treasurer, Dr. George W. Keely, presented a few interesting statistics to the society, among others being the following: The association dates its existence to a preliminary meeting held at Niagara Falls in August, 1859, the organization and first session being held at Washington, D. C., in July, 1860. Up to 1884 it has had altogether 747 members, with but 146 at any one time. At present there are 270 members, 32 of whom were admitted at the present convention.

Dr. Marshall read the report of Section VI—Pathology, Therapeutics and Materia Medica.

The section had received the report of the contents of a tumor, containing a partially developed jaw, with teeth and long hair; also of an osteo-sarcoma. Not offered to the Association, having already been published in a medical journal.

Dr. Hooper read a paper, which was the history of a case of exsection of the inferior dental nerve, with dental engine fissure burs, chloroform being administered. The bone was exposed from the mental foramen to the angle, and two and a half inches cut from the nerve. The wound was dressed with horse-hair drainage, and healed readily, leaving scarcely any cicatrix. The operation afforded entire relief from neuralgia, for which the patient had had all her teeth extracted in vain.

Dr. Hooper also exhibited a large piece of necrosed bone, removed from the left inferior maxillary of a boy twelve years of age. A four per cent. solution of cocoaine was used. The disease was the result of an abscess allowed to break on the outside, and which had been treated for nine months by a physician.

He reported a case of supposed cancer, and treated as such by several physicians, but which was only an abscess from the dead pulp of a right central incisor, probably dating from a fall down stairs several years previous. It yielded readily to proper treatment and the patient at the same time relieved from persistent headache and hardness of hearing of long standing.

BACTERIO-THERAPHY.

Dr. A. W. Harlan read his paper on Bacterio-theraphy. He said it was not yet clearly understood in what special manner germs operate to produce pathological conditions, or whether the effects produced were the results of their mere presence, or of the soluble ferments excreted by them. Admitting that they are inimical to healthy living tissues, the question is how to get rid both of themselves and of their products, and this investigation constitutes what may be termed bacterio-theraphy. The paper dealt mainly with the various antiseptics, disinfectants, germicides and *microbicides*, and a determination of their comparative values.

Dr. McMillen, (Kansas City,) presented for examination the skull of a negro, who died at the age of 55, an habitual drunkard, who had taken his food and whisky all his life through the opening made by missing teeth, his jaws being completely anchylosed—probably congenital. His history was known from the age of five years, and there was no record of his jaws ever having been otherwise than firmly set.

Section VI desired a renewal of the appropriation for scientific investigation, which they designed to expend in a systematic study, by men of known ability, of the disease pyorrhœa alveolaris, its microbes, the exudations and secretions, the saliva and urine, etc.

The report of Section VI was accepted and the subjects opened for discussion.

Dr. Atkinson inquired if the long hair mentioned, was growing directly from the jaw proper; he did not understand how hair follicles could develop from a jaw bone.

Dr. Marshall said that, more exactly stated, there was a partially developed superior maxillary with skin tissue and hair.

Subject passed.

Section VII. The Secretary, Dr. Thompson, said that their report having been accepted at a previous session, they now desired to present their papers.

Dr. W. Storer How, read a paper on the importance of making litmus paper tests of the oral fluids, and their varying condition in connection with dental lesions. He had prepared a chart with a system of notation—the chart in book form, with a pocket for litmus paper; also envelopes for strips of litmus paper to be given to patients with requests to test at different times and note the changes. Patients could be readily interested in the paper, and in this way facts might be ascertained on which to base theories.

DENTAL HISTOLOGY.

Dr. A. H. Thompson read a paper on Protoplasmic Nutrition, and Molecular Metamorphosis in the Dental Tissues. He said that the basis and matrix of all animal tissues, embryonic protoplasm, is that element which conveys nutrition, directs tissue building and carries nutriment to it and waste from it. It is impressed with mysterious powers through which all the various organs and tissues of the complex organisms assume their special shapes, characteristics and powers; the particular elements necessary to elaborate such tissue being selected from the nutrient pabulum, and the waste carried out, each tissue and each organ performing its allotted work in the economy of the organism. The teeth are subject to the same general laws of nutrition. The protoplasmic matrix of the dentine and enamel is nearly pure albumen; the pulp selects from the pabulum the organic and inorganic elements necessary to construct the different tissues, in accord with typal demands. Dentine is formed in a protoplasmic matrix, by the reduction of supplied lime-salts, formed in successive capsules, pierced by fibrils, around which permanent tubuli are formed; the contents of the tubuli, the fibrillæ, convey nutrition to and waste from the tissue. The enamel is formed in an analagous manner, with areas of living matter throughout the tissue also; perhaps a reticulum of protoplasm penetrating the substance of the prisms themselves, conveying limited nutrition with corresponding elimination of waste, by means of the connection with the living matter of the dentine at the periphery. As the dentinal tubuli anastomose with the canaliculi of the cementum, circulation is continuous throughout the tissues, maintaining some vitality even after the death of the pulp. By similar anastomosis between the dentinal tubuli and the areas of living matter in the enamel; nutrition is also conveyed to the latter tissue though in quantities minute and almost inappreciable. Molecular change is therefore possible throughout tooth structure, and its tissues subject to alterations through pathological conditions of the circulating fluids, as during gestation and lactation. Even under other conditions we see teeth that have been of good dense structure, take on a condition of softening, something acting through the circulating fluids, disintegrating and carrying off the lime salts, inducing a molecular change, a retrograde metamorphosis. In some conditions, molecular construction is held in abeyance while waste goes on; in others waste is lessened and construction still goes on with consequent increase in the density of the tissues. These molecular changes are still an impenetrable mystery.

The Committee on Credentials reported the following additional delegations: First District Dental Society, New York; Minneapolis City Dental Society; Wisconsin Dental Society; Minnesota State Dental Society.

The Auditing Committee reported favorably on the accounts of the Publication Committee and of the Treasurer.

The President called attention to the display of rare drugs, made at his solicitation by Sargent & Co., of Chicago.

On motion, adjourned to 8 P. M.

SECOND SESSION—THURSDAY AUGUST 5.

Called to order at 8:15 P. M. The President in the chair.

Minutes read and approved.

After some discussion of proposed changes in Sections, and an effort to change the order of business and proceed to the election of officers, to accommodate a number of members who wished to go home—which did not receive unanimous consent.

Dr. H. A. Smith read the next paper of Section VII,

THE TONGUE IN HEALTH AND DISEASE.

He said that the tongue had always been regarded as affording a reliable index to systemic conditions, but that the *furred tongue* formerly considered the result of a secretory process of the tongue itself, was considered by modern science as essentially a growth of fungus—of the micrococcus, and bacillus subtillis, vegetable spores being deposited in the papilla of the tongue from the food or from the atmosphere in inspiration, growing with greatest rapidity when the tongue is at rest, the coating always being thickest in the morning. The paper dealt especially with surgical disorders of the tongue. The teeth, if healthy and intact, form a protecting wall around the tongue ; if broken or bruised, they become the source of irritation to, and diseases, of the tongue. On the other hand, if the tongue is the seat of organic disease, it becomes an offence to the teeth. The disease known as thrush is due to the presence of the fungus *odium albicans.* Children who are fed with a spoon are more subject to this disease, not having the neutralizing effects of the free flow of alkaline saliva induced by the act of sucking. Traumatic ulcers, from the irritation by broken teeth, are speedily cured by removing the cause. The ulcers formed under the tongue in whooping cough, formerly supposed to be specific lesions of that disease, are probably due to the friction of the teeth during the frequent paroxysms of coughing.

Amalgam fillings have been supposed to cause aphthous patches. but these are probably due to roughness of the fillings or margins, acting as mechanical irritants. There is possibly a specific parasite present in these aphthous ulcers, and it is well to guard against contagion. Carcinoma of the tongue being most frequently seated in that portion of the tongue in contact with the teeth, points to the importance of keeping them in proper condition, and of examining them in the diagnosis of that disease.

Dr. Thompson read a paper on

PATHOLOGICAL HEREDITY AND GOUTY TEETH.

He stated as one of the recognized facts in dental embryology, that defects and deformities of the teeth are clearly due to certain diseases, though we are yet in the dark as to *how* this is effected. It is perhaps due to perversion of the nutritive fluid, the pabulum being poisoned by disease, or the formative organ itself may be affected, causing the death or distortion of the building cells. Structural injuries due to hereditary influences are far more fatal than the workings of exanthematic affections.

The effects of transmission are so invariable that certain characteristic marks are recognized pathognomonic signs of certain diseases, and have a positive diagnostic value to the pathologist. It is very desirable that observations in this direction be made and recorded, especially by dentists who have access to hospitals where large numbers of persons are treated.

Gouty teeth are not common in this country, but they have been very carefully studied among others by Drs. Duckworth, Alf. Carpenter, W. Stewart and Horatio Donkin. Dr. Thompson has found one genuine case in his practice where the characteristics are well marked. It is an imported case, where gout has been hereditary in both branches of the family for generations. He presented casts of the teeth, which were short, with thick, heavy shoulders, of very dark color, solid and dense in structure, with encircling grooves, making step-like terraces. The gums were light and thin, with sharp margins against the crowns. The anterior teeth were all strongly marked, the bicuspids but slightly, the molars normal. The history of extracted first molars show the characteristic difficulty. Fothergill says the configuration of the teeth has a distinctive value; that gouty teeth wear at the edges, but come out without caries, from ostitis along the fangs. The incisors will be more worn than the canines, and the center of the tooth darker in color than the edges. They are recognized as soon as seen.

Dr. Ingersoll criticised the language *inherited disease;* that only a diathesis or tendency to the disease was transmitted.

Dr. Morgan thought the stamp of the characteristics of the parent depended upon what stockmen call *potentiality*, depending on nervous rather than on the physical organism. In regard to the paper of Dr. Smith, diseases of the tongue do not usually come within the range of our profession. In his experience of forty years he had seen but one case where aphthous ulcers coincided with amalgam fillings. They were usually the result of a depressed condition of the fluids of the body, though parasites were undoubtedly concerned, as was proved by their yielding to arsenical treatment.

Dr. Brophy thought that dentists met with incipient diseases of the tongue much more frequently than was generally suspected. He had seen a number in the last four years. When early detected and an operation promptly made, the probabilities of prolonging life were good; but they developed very rapidly, and very little delay would lead to a fatal termination. It was a mere assumption even with such a *tendency*, that there would have been any development without some local cause of irritation, as a broken tooth, or the roughness of a pipe stem, perhaps aggravated by nicotine. He thought the disease was on the increase; that we certainly see and hear of more of it.

Dr. Harlan thought that more consideration should be given the paper of Dr. How. He thought the explanation of acid conditions could usually be found in the products of germs. The recent investigations of Dr. G. V. Black were very conclusive, that the excrementitions of germs were acid ferments. This being the case its correction was very simple—destroy the germs and you have no more acid products. He regretted that he had not been able, through other duties, to give the attention to Dr. Thompson's paper which it merited. The paper of Dr. Smith appeared to be very timely—the tongue was a very important member, but it was too often a disgustingly dirty member—patients should be taught to keep both their teeth and their tongue clean.

Prof. Truman said that he had been accustomed to test the saliva for many years. He was surprised to find it pronounced acid. His experience was that the mixed secretions of the oral cavity were neutral. At night when the mouth is at rest, and there is but little secretion of saliva, will find an acid reaction, but in the day time the mixed secretions are neutral.

ATKINSONIAN.

Dr. Atkinson said he was so happy he did not know where to begin. He congratulated them in discussing scientific matters, but they were in the deepest kind of a muddle for lack of a knowledge of even the alphabet of the molecular changes through which the elements pass in the process of nutrition. It would require too much time and patience and preparation to make all that clear now.

Microbes are the immediate cause of disease; they are the antecedents of unhealth. Through retrogressive molecular changes in living bodies they die, but we know only antecedent and effect; we do not know cause—"Topeka" has had glimpses of the embodiment of light, but he is all tangled in his nomenclature.

Proto—first plasm; there is only one protoplasm, not wrought out of something before it. Food is churned into pabulum, which is the food of all the tissues. We cannot see how the molecules combine in this building up. We do not know how the molecules of water come from two germs. It was *in esse*, an eternal entity, without beginning or end, $H_2 O$. What reduced it from gas to liquid? What high priest awakened the affinity? Water is the universal solvent, producing saliva, gastric juices, chyme, chyle, blood, resolving protoplasm into pabulum, carrying it into needy territories. Listening in the mind, is equivalent to the tissues asking pabulum. If we could but be delivered from false nomenclature.

Harlan had the cheek to tell me the first paper on pyorrhea had yet to be written! He was born well, but he has not been educated up. If he could pass ten years by the side of our beloved old secretary, to hold him to his duty, he would grow to be a Grant in ten years. When he has taken in one breath, he wants to blow it out as fast as possible to get rid of the ashes and lye; if well leached with lyes (lies?) he would walk as a light on a hill which could not be hid; his affections and intellect are all right, but he has been falsely educated, and will not listen to inspiration. We want to get away from embryonic conditions, you don't want to hold up your placenta and cord and stick it full of pin-feathers, going about, holding it up and saying, See what a be-au-ti-ful thing my mother gave me!

On motion, subject passed.

Dr. Crouse offered a very lengthy report from members of the Executive Committee, giving a detailed history of a good deal of unpleasantness, and offering several amendments to the Constitution. After a heated discussion, all reference to the unfortunate affair was ordered stricken out.

Dr. Taft thought the offered amendments should be read again, and each one carefully considered before adoption. He objected to the hasty adoption of any amendments to the Constitution.

Unanimous consent not being given, the amendments lie over for a year.

The Committee on Credentials reported a delegate from the New Jersey State Dental Society.

On motion, adjourned.

SOUTHERN DENTAL ASSOCIATION.

EIGHTEENTH ANNUAL MEETING, NASHVILLE, TENN., JULY 27 TO 30, 1886.

[Reported for the JOURNAL by Mrs. M. W. J.]

THE Southern Dental Association convened in eighteenth annual session, in Lecture Hall of Watkin's Institute, Nashville, Tenn.

The meeting was called to order by the President, Dr. W. C. Wardlaw, at 10 A. M., July 27, 1886.

Officers: W. C. Wardlaw, D.D.S., Augusta, Ga., President; B. H. Catching, D.D.S., Atlanta, Ga., First Vice-President; J. Rollo Knapp, D.D.S., New Orleans, Second Vice-President; E. D. Hamner, D.D.S., Galveston, Tex., Third Vice-President; E. S. Chisholm, D.D.S., Tuscaloosa, Ala., Cor. Secretary; R. A. Holliday, D.D.S., Atlanta, Ga., Recording Secretary; H. A. Lowrance, D.D.S., Athens, Ga., Treasurer.

Executive Committee: W. H. Morgan, M.D., D.D.S., Nashville, Tenn.; G. F. S. Wright, D.D.S., Columbia, S. C.; W. H. Richards, D.D.S., Knoxville, Tenn.

The meeting was opened with reading from the scriptures, and prayer by the Rev. J. D. Barbee.

The minutes of the last annual meeting, held in New Orleans, March 31, 1885, were read and approved.

Dr. J. H. Prewitt delivered an eloquent Address of Welcome on the part of the Dental Association of the State of Tennessee, and the dentists of Nashville.

This was responded to by Dr. G. H. Winkler (Augusta, Ga.).

A hearty welcome was tendered to all visiting dentists, to the members of the medical fraternity, to the ladies, and to the students of the various educational institutions of Nashville.

Dr. B. H. Catching introduced the venerable Dr. W. H. H. Thackston, the oldest living dental graduate, who addressed the

Association in the elegant, courtly style of the Old Virginia gentleman.

The President delivered his Annual Address, in which he discussed the mooted question: Is dentistry a distinct profession or should it be regarded as a specialty of medicine?

Giving a brief retrospective view of the history of medicine, its natural division into surgery and general medicine, oral surgery or dentistry being necessarily closely connected with the former, he concluded that, as division of labor tends to proficiency of attainment, and the modern "specialist" is a desirable and legitimate personage, no reason existing why the specialist of the mouth is not as desirable and as professional as the specialist of the eye or the ear, of nervous disorders, or of uterine affections. He thought that as time and research extends the spheres of both professions, provision will be made for medical and dental doctors being taught and graduated by the same corps of teachers, though, in his own judgment, dentistry pure can be better taught in dental colleges. As the standard of qualification is raised, men of character and education from our ranks are being recognized by physicians as professional equals. He spoke of the advanced stand taken by the dental profession in the matter of examining boards, State laws, etc., quoting with just pride the State of Georgia, where illegal practitioners of dentistry are successfully prosecuted, while the medical profession can only grit their teeth and bear the curse of quackery. He commended to the consideration of the Association the broad questions of appointments to the army and navy, and in the national board of health, a share in congressional appropriations for scientific research, etc.

In the regular order of business, the report of the committee on Dental Education was called for.

Papers were presented by Dr. B. H. Catching, Atlanta, Ga., Dr. W. D. Dunlap, Selma, Ala., and Dr. M. C. Marshall, Little Rock, Ark. A paper from Prof. Gorgas was received too late for reading, and referred to the Publication Committee.

These papers, though all bearing the same title, bore distinct marks of mental individuality, as clearly marked as the physical individuality of the writers.

DENTAL EDUCATION.

Dr. Catching, chairman of the committee, read the first paper. He took the ground that while dentistry, as an art, had made wonderful progress, as a branch of medical science, it had advanced very slowly. The establishment of distinct schools, and the creating of a separate degree, being drawbacks to advancement. The distinction attained has been under great disadvantages, depending mostly on advantages obtained in schools where medicine is taught. To place dentistry on a plane where it will command the highest respect of the people, and have accorded to it its full sphere of usefulness, it will be necessary to do away with dental colleges, with university departments, with a separate degree, graduating first as doctors of medicine, and then from a dental infirmary, being thus fully equipped to practice dentistry as a specialty of medicine.

Dr. Dunlap, whose paper, in his absence, was read by Dr. Teague, of Aiken, S. C., advocated the system of office training under a competent preceptor, preliminary to and in connection with college education. Helping daily in practical operations, carrying out the ideas of his preceptor, the student laying a firm foundation on which to build. He learns the use of tools and instruments, his eye and hands are trained, and when he enters college he knows his deficiencies and his necessities. He is prepared for a process of cramming and stuffing of mental food to be digested and assimilated in vacation, with the help of his preceptor, and, after he opens his office, while waiting for patients.

He also spoke of the work done by associations as an element in true professional education, though no certificate of merit, no diploma, be given; no stamp on the brow with the inscription, "I made you what you are." The seal of the Association means more than "I have examined and found competent"—it means materially aided in the preparation for life-work.

Dr. Marshall took up still another branch of this prolific subject. He said that thorough education was the *alpha* of the student in the laboratory, which alone could entitle him to the *omega* of his loftiest ambitions and attainments in professional love and skill. He spoke of the difficulty in attaining information less than a quarter of a century ago, when everything was kept as a secret, to be disposed of for a consideration. Dentistry was then chaos. He reviewed the history of the earlier organizations, and the spirit of progressive, philanthropic enlightenment shedding abroad its benign influence, widening our capacity, cementing fraternal feeling, and building up a literature portraying that progress which is the exponent of our attainments. All great results in the world's history are the outgrowths of co-operative industry. He said of the present system of dental college education, that unfortunately professorships are valuable in proportion to the number of matriculates, leading sometimes to the offer of undue inducements, as guaranteed graduation within a specified time, for a specified fee, etc.; that there was no demand for the large number of colleges now in operation, their very number creating such unjustifiable practices. Chairs that were not profitable would be filled by men of the same calibre as the majority of our State Legislators, men of brains and ability rarely immolate themselves on their country's altar. We should have only representative men, and they should be well compensated. He thought that possibly endowment was the only plan. He hoped that the Association would give this subject attention, seeking to formulate a system of college matriculation and graduation that should elevate the standard of dental education, and date an epoch in professional existence, a glory worthy of our best efforts.

The subject of Dental Education, as treated in these papers, was discussed at length, occupying the afternoon session and a portion of Wednesday morning.

Dr. J. J. R. Patrick, (Ill.,) gave an extended retrospective view of the growth of dentistry, paying an eloquent tribute to the work of John Hunter.

Dr. W. H. Morgan corrected a number of errors in dates mentioned in the papers read, and upheld the present system of college education.

Dr. B. H. Catching took strong ground in opposition to the views held by Dr. Morgan.

Dr. O. Salomon, (La.,) agreed with Dr. Catching in theory, but thought he had pictured an ideal future not practicable in the present.

Dr. B. H. Teague, (S. C.,) sought to reconcile the opposing views of preceding speakers, admitting the reproach brought upon

American dentistry by the reprehensible practices referred to. He thought the standard of admission, as well as that of graduation, should be raised, and the standing and attainments of the candidate be more carefully inquired into.

Dr. H. J. McKellops, (Mo.,) spoke of the duty of members of the profession to each other. He said that he loved his profession and every man in it; that he put his latch-string out, and every man was welcome to stand by his chair; he trained his patients to be willing to permit this. He never excuses himself from the call of a brother-dentist because he has a patient in the chair. He wished that every boy would study the life of John Hunter, he would then realize how much lies within himself. Only his own personal exertions can place him on the top round of the ladder. He spoke of the clinics of Dr. Herbst which he had attended in New York, and the noble generosity of the foreigner who came to us—not with patents to sell—but to give us all he has.

Dr. W. H. H. Thackston, (Va.,) spoke in favor of the established system of college education; a system which has accomplished so much in five decades ought not to be hastily abandoned. He said that no system in the world could force ideas through thick skulls, or fill empty heads with brains; that there were noodle-heads in all professions, and that comparatively few men were fit to be dental cadets. Men who might make distinguished reputations as physicians, or lawyers, might be utterly incapable of success as dentists. We should not condemn a system because, under it, a few men were not what they ought to be.

Dr. G. F. S. Wright, (S. C.,) spoke of the good accomplished by State dental associations, and State dental laws, in raising the standard of dental education.

Dr. James Johnson, (Va.,) thought that a change was needed; that there were too many colleges, and that only by the establishment of chairs in endowed universities, could we get the best talent for which we now have not the means to pay.

Dr. Crawford, (Ky.,) thought the fact very significant, that while dentistry draws from all other professions, it was very rare for a man to abandon dentistry for any other occupation; that it has a peculiar fascination, even in its present crude state. The papers read, and the discussion, followed two contrary channels —the association, and the separation of dental and medical instruction and graduation; he thought the idea that a dentist must be a doctor, an M. D., has come to stay; that a large per cent. of our literature is based upon the fundamental principles of medicine, and that the best articles in our journals bear the signature of M. D., perhaps with and perhaps without D. D. S., but the M. D., takes precedence.

Dr. Stubblefield, (Vanderbilt University,) said that if all dental students could be graduates from some literary institution, the dental colleges would have a broad foundation on which to put the capstone; but unfortunately this was not the case, and the colleges had to do the best they could with the material which came to them.

Dr. Morgan said that a mistaken idea seemed to pervade both the papers and the discussion, viz: that certain attainments *entitled* a man to a college degree; that this was all a mistake; that a degree was conferred by a college only on the fulfillment of certain conditions, and that no man, even with the attainments of an archangel, was entitled to a degree until he had complied with those conditions. He said that, as a rule, office teaching was a positive disadvantage to a college student; he would rather take a young man fresh from behind the plow, than a student from the hands of the average preceptor. He was not in favor of a general medical education for the man who wished to be a dentist; he had no use for a knowledge of pharmacy or of midwifery; for the treatment of cholera or of yellow fever. He would give the dential student a broad foundation, but ignore these collateral branches; the dentist had no use for all those *isms* and *pathies*, which destroy human life rather than prolong it. That the reputable colleges of to-day were not responsible for the damage done by the illegal diplomas of certain institutions.

Dr. Adair, (Ga.,) thought that the present requirements of the colleges, as set forth in the work of the National Association of College Faculties, showed a great advance in the standard of dental education.

Dr. Morgan introduced Dr. Hubbard, of Meharry College, Tenn., an institution for the education of colored men, which has recently organized a department of dentistry, with a faculty of professors and graduates from the Vanderbilt dental department.

Dr. Hubbard gave a very interesting history of the institution.

On motion, the subject of Dental Education was passed, and Dental Hygiene was called.

DR. B. H. TEAGUE, (Aiken, S. C.,) read a paper on the

PERSONAL HYGIENE OF THE DENTIST.

He said that in the early days of dentistry, men of delicate health were advised to follow dentistry, as a health-giving occupation; then, itineracy was the rule, with its accompanying frequent changes of air and diet, its intervals of labor and travel; in the office there was the exercise of hand pressure in operative work; of the rolling mill and the blow-pipe in the laboratory. But, with modern aids and appliances, the practice of dentistry is fraught with danger to health. Close confinement for long hours, day after day, in overheated, ill-ventilated offices, is weary labor, exhausting to both hands and nerves. Excelsior dentistry too often leads not to a golden reward, but to dyspepsia, biliousness, frequent periodical sick-headaches and other ailments of stomach, liver and lungs; bitters, toddy and pepsin are resorted to; the nerves are soothed by the strong cigar; brief rest is found on the easy lounge; the midnight oil is burned while reading journals, recording incidents, composing articles, experimenting, till the overstrained nerves prevent sleep, and life becomes a burden alike to the book-worm, the scientific experimenter, or the average toiler who with bent back, compressed viscera, in his over-heated laboratory inhales the dust from his waste plaster barrel or the fumes from his vulcanizer or his furnace. This must all be changed. The consciencious dentist must make it his *duty* to have fresh air and *exercise*, on foot, horseback or the bicycle; he must study his stomach, and regulate his *diet*. Absolute *cleanliness* both of person and of garments should be the rule of his life. In place of standing all day, he should use a stool for himself, and a chair for his patients which can be placed in any position, enabling him to sit much of his time while operating; this will obviate the bent body and hanging head, the frequent cause of intercostal neuralgia and vertigo. Habitual standing also occasions hemorrhoids and varicose veins. A motor power should also be used for the dental engine, otherwise one leg is liable to be injured from over use, the other from disuse. Sleep should be plentiful, and late hours, worry and fret avoided. The *eyesight* should be strictly cared for with neutral tints for the surrounding walls and all bright lights avoided, and the temperature and ventilation closely watched.

This eminently practical paper was greeted with applause, and discussed at length by Drs. G. H. Winkler, (Ga.,) W. H. Richards, (Tenn.,) Adair, (Ga.,) J. Hall Brown, (Va.,) Morgan, E. S. Chisholm, (Ala.,) G. Chisholm, (Miss.,) McKellops, Rembert, (Ala.,) Wright, Wardlaw, Freeman and Thackston.

A paper on the subject of Hygiene, sent by Dr. Woodley, (Va.,) was referred to the Committee on Publication.

SECOND DAY—SECOND SESSION.

OPERATIVE DENTISTRY.

Dr. Wm. Crenshaw, Atlanta, Ga., read a paper on the lack of system of filling teeth, and the possibility of reducing it to a perfect system, by the application of principles endorsed by such men as Atkinson, Webb, and Parmly Brown.

Up to a very recent date, in the work of filling teeth, each man has had his individual methods of operating, often involving principles utterly antagonistic. It is easy now to prophesy the end of all operations which employ the file or other means of cutting away the tooth, replacing the contoured, rounded, natural form with a flat-faced filling. Up to within a few years, the results obtained by the old methods were so unsatisfactory that many were tempted to retire ignominiously from the field. But the work of Webb and his confrères cast a flood of light, by which we can see how to work, on principles which ensure the highest excellence, the greatest and most permanent good, restoring the anatomical features of each tooth, the surfaces thus restored with gold being actually safer from decay than the normal tooth.

For uniform, systematic work, Dr. Crenshaw considers the essential adjuncts to be rubber dam, Perry's separators, the electric mallet, and cohesive gold. With these only and always, a complete system is possible. When materials are varied, changed, and abandoned, with every variation of cavity and conditions, it is not possible to reduce work to a system. He considered matrices a snare and a deception.

Dr. Jas. S. Knapp, whose name appeared for a clinic on nerve canals, sent a paper on that subject, which was read by Dr. Salomon of New Orleans.

Dr. Knapp considered that, as a rule, the exposure of a nerve was soon followed by loss of vitality, in spite of the praiseworthy efforts of dental operators who exert their fine manipulative skill in endeavoring to preserve it. Thirty years ago, it was claimed that the diseased portion could be removed with a sharp excising instrument, the wound healing by first intention, but he considered this theory as long ago exploded.

Forty years ago, it was claimed that the nerve canal could be reached by drilling and the nerve punctured, when it would recede from point of exposure, and its vitality be preserved. Dr. Knapp concluded that no trouble ensued only because on the contrary, such a nerve would suppurate and the vitiated secretions of pus escape through the drill hole. Within the last twenty years the great majority of the best operators had concluded that it was better to remove an exposed nerve entirely and fill the canal to the foramen. He said that the philosophy of an alveolar abscess was easily understood, it being the result of a decomposing pulp left in the chambers and canal, its removal being more easily said than done, unless a large portion of the crown was cut away. The opening should be enlarged and made funnel-form to facilitate the passage of instruments, in the work of cleaning, shaping and filling the canal. He considered the best method of removing the contents of the root canal to be a delicate pointed stick of osier or orange wood, placed at the entrance of the canal and tapped two or three times with the mallet, when the pulp would be found to adhere to the wood. When there is an opening through the plate of bone and the gum tissue, the tooth should be filled at once, but if the escape is through the cavity, it should be treated by antiseptics for a week or ten days. The canal can be filled with gold, lead, os-artificial, Hill's stopping, or orange or willow wood dipped in carbolic acid, the latter being the most easily adapted.

Dr. Salomon opened the discussion, opposing the views taken in the paper he had just read. The papers were discussed by Drs. Salomon, Dotterer, (S. C.,) J. J. R. Patrick, McKellops, Morgan, Winkler, and others, no one being found to second the position taken in the first paper, viz: advocating the use of the same materials every time,—otherwise gold and the electric mallet, with Perry's separators and the rubber dam, in order to achieve a perfect system; or the position taken in the second paper, namely, the immediate removal of every exposed nerve.

Dr. Salomon would endeavor to save the nerve, every time, even if diseased, would puncture slightly, treat with eucalyptus and iodoform and cap. If pus had already formed, would cut out the diseased portion with a sharp spoon-shaped excavator. He saved fifty per cent. of such cases. In some cases he puts next the pulp a paste compound of calomel, oxide of zinc, and glycerine. He had seen some most outrageous results from the wood driven into the pulp, patients suffering agony from the partially destroyed nerve, in some cases the wood being driven through the apex. He said that the pulp does not entirely fill the chamber; at the age of seventeen or eighteen there will be a distance of from two to two and a half millimetres between the wall of the chamber and the pulp, and at the age of thirty or forty, from four to four and a half millimetres.

Dr. Louis Dotterer said that as the pulp sends out filaments all through the dentine, he did not see how there could be any space between the pulp and the dentine. He did not approve the idea of cutting off a portion of a living nerve; he thought it would be terribly painful. He could not agree with Dr. Crenshaw in the exclusive use of cohesive gold; soft foil is so congenial to the cervical margins, lapping well on the edges and not liable to crack them; would add cohesive gold to finish with.

Dr. Patrick thought too much importance was attached to the terms hard and soft, cohesive, non-cohesive, adhesive, etc., as applied to gold, which, if pure, was gold all the world over; if different qualities were admitted, it was due to some alloy, or something smeared on the surface; the difference was not in the gold itself.

Dr. McKellops said that he made it his rule to have the best that money could get; that when anything promised to be better than anything he had already, he gave it faithful trial. He had spent a great deal of money on engines, and mallets, and batteries; had had proof-gold, tested, from California, at fifty dollars per oz., but after all, nothing could do such delicate work, or insure such perfect success, in the hands of the careful operator as the Bonwill mechanical mallet. He said that it begins now to look as if the system of "this man from over the water," (Herbst,) was going to be the coming thing, but it would not do in all hands; he would not condemn anything because it was not his own way; he would never say *this* is the best way, or *that* is the only way; each man must work it out for himself individually, and not take it on the ground of what another man says. He would not like to undertake the method of Dr. Salomon with regard to pulps, and he did not find the shrinkage of the pulp from the walls which he claimed to exist; the pulp was often prominent up in the branches of the cusps; there was no such shrinkage in young teeth, and in old age it was followed by a corresponding filling up with tooth bone.

Dr. Morgan said it seemed to be taken for granted that as good work could not be done with soft gold as with cohesive; only a few days since he had occasion to examine soft-gold fillings he had put in 1848, and found them still standing without a flaw; that was good enough for him.

Dr. Beech thought it a narrow view to feel restricted to the exclusive use of a specified gold by a specified method; to make the best operations required a combination of all the best; use cylinders and strips—cohesive and non-cohesive—all in the same cavity, if thereby the best results can be obtained. The man who systematically confines himself to any one material or method, deprives himself of many advantages in the salvation of teeth. He considered that it made no difference what the root was filled with so that it was perfectly filled to the foramen; use gold or tin, or oxychloride, or wood, what you will, so you fill it perfectly; for fifteen years he had advocated a pencil of lead, and had yet to find the first failure in roots so filled; and there was a chemical reason for this; a lead bullet will not cause suppuration; it will be encysted; nature tolerates it, even if driven through the foramen.

Dr. Winkler would combine the best of all methods, studying the style of every good operator, each of whom had his own method. We want a non-conductor near the nerve; we must protect the cervical margins from leakage. He did not know any man capable of making a good soft foil filling who did not think it superior to cohesive foil in being easier to the patient and easier on the operator. Perfection is attained in a filling one third or one-half of which is of soft foil thoroughly condensed, and finished off with cohesive foil.

Dr. Patrick asked Dr. Winkler to define the difference between soft foil and cohesive?

Dr. Winkler said to his mind the difference was practically, that in soft foil the pieces would slide on each other; in the other they would adhere to each other, or stay where put. One man will use a rough-surfaced, broken instrument; another a polished ivory or agate instrument, and each will make beautiful work; each has his own method, but if the work is perfect, that is all that is wanted.

Dr. Morgan said he was glad to hear it stated that all pure gold was chemically the same, the difference growing entirely out of the relations of the molecules. Soft gold is not cohesive because it is not clean; there is something on the surface, but the difference is not in the gold itself; if annealed and the moisture or impurities driven off, it becomes cohesive. First class operators can make first class operations with all kinds of gold; some use soft foil exclusively; Dr. Dwinelle has used only sponge gold for many years. When the pulp is dead, the tooth is dead to all intents and purposes; the life of the dentine is destroyed, and the cementum stands between the living and the dead.

(To be Continued.)

Correspondence.

"I charge you that this epistle be read."

A CASE IN PRACTICE.

My attention was called to the following case in April, 1884. Mrs. H., age 38, native of Ireland, called for the purpose of having removed several badly decayed roots. After removal she claimed that one of her "eye teeth" had broken off some ten years ago and the gum had grown over it. On careful examination found the gum in normal condition. After introducing lance nothing was found to indicate the presence of a root. Patient was dismissed. Ten days afterwards her vision was so impaired that she was unable to read or sew. A plate was introduced, but she could not wear it with any satisfaction on account of severe pain in the region of the cuspid eminence. Patient called in again last June, when I found a tooth almost erupted. It was extracted with difficulty and proved to be a full sized right superior cuspid. (The enamel, however, was not well developed.) The tooth was in an abnormal position, being on a line drawn from the external angular process to the median line. It measures one inch in length and five-sixteenths in width across the cutting edge, and is slightly curved near the apex. Patient has regained her sight and has no trouble in wearing plate since the removal of the tooth. E. E. STEWART, D.D.S.

COLLEGE CORNER, O.

"THE DESTRUCTIVE ENERGY OF THE TINCTURE OF THE CHLORIDE OF IRON ON THE ENAMEL OF THE HUMAN TEETH."

TO THE EDITOR OF THE OHIO DENTAL JOURNAL:—*Dear Sir*— In the September issue of the JOURNAL there appeared a number which was read before the Odontological Society of the State of New York, of unproved assertions, under the signature of Geo. A. Mills, D.D.S., antagonizing a paper with the above title, in June.

As only a synopsis of the paper in question has, up to the present date, been published, the critic naturally confesses, at the outset, that he has criticised a paper which he never read. The paper alluded to will be published in full in the *Dental Cosmos*, probably in October, when the readers of the JOURNAL and the "public," whom Dr. Mills fears will be so "befogged," can better judge of the correctness of his attempted criticism.

GEORGE W. WELD, M.D., D.D.S.

NEW YORK CITY, Sept. 18, 1886.

"PEROXIDE OF HYDROGEN."

ED. JOURNAL:—I have read some of your articles on this subject and was led thereby to make the following experiments which I hope may lead to the investigation due so important a remedy, or at least result in informing us correctly as to its true chemical action.

A test-tube containing a mixture of blood and hydrogen peroxide was sealed, and allowed to stand over night in an inverted position. The accumulated gas, when tested with a glowing wood-ember, gave a brilliant and convincing proof of the presence of oxygen. The test of a mixture of pus and hydrogen peroxide gives the same result. The accumulated gas from each mixture was then tested, with lime-water, for carbonic acid gas, and failed to produce the slightest turpidity. These experiments clearly convince me that the gas escaping from a mixture of blood or pus and peroxide of hydrogen is oxygen, whether this mixture is brought about in a test-tube or in the washing out of a cavity. Had any carbonic acid gas been formed, it would have been manifest in the lime-water test, or at least detracted from the brilliancy of the oxygen test; and as it is not probable that part of the oxygen would undergo a reaction, producing carbon-dioxide, while the rest remained satisfied oxygen, the results of these simple experiments are, I think, conclusive.

CINCINNATI, O. H. T. SMITH.

VULCANIZING WITHOUT FLASKS.

ED. JOURNAL:—I occasionally see in the dental journals "A new process for flasking rubber." Those who use rubber without "waxing up," *need not flask.*

After removing models from the articulator, bevel them on the back from center to the borders of the rubber. Make a band of medium stiff paper, (by pinning the ends together,) large enough when placed around the model to allow a space of about one-fourth of an inch between the teeth and the band. After saturating the model with water, place on the table, encircle it with the band, and fill with plaster, until the model and the teeth are covered about the same depth as mentioned above. When hardened, vulcanize as usual; but be *sure* and let the vulcanizer cool off gradually, or else the plaster will burst loose from the teeth and cause the plate to warp. Such has been my method of vulcanizing for two years, and I have had no failure.

PAOLI, IND. B. T. RADCLIFF.

P. S. Send to M. A. Spencer & Co., of Cincinnati, O., for a "Rubber Spatula," my design. It is cheap, convenient, will save time and is not patented. B. T. R.

"THE BLOW-PIPE"—"NEW HÆMOSTATICS"(?)

"Old fashioned," but good, we would say, in reply to the *Dental Advertiser.* I commenced using the mouth blow-pipe forty years ago, and although I have used power blow-pipes, foot-bellows, etc., I still prefer the "old way"; in fact it is a pleasure to use it, and I have seen many others of the same way of thinking. Of course there are many who have never learned to blow a continuous blast, and to such it is uphill work, "labor, perspiration, wind." Every dental student should learn to use a mouth blow-pipe properly, and in order to do it, should have a proper blow-pipe.

In the September Journal I find the following:

> "Dr. Morales, of Barcelona, has found hazeline—an extract of witch-hazel—when locally applied, to act successfully as a styptic in hemophilic patients when all other means, not excepting the thermocautery, have failed."

Is it not funny that after years of use of "Pond's Extract of Witch Hazel," as a hæmostatic, and one of the best, too, that it should just be discussed in Spain, and brought to light in this land through the *Cincinnati Lancet and Clinic?* Taken internally it is excellent in hæmorrhagic diathesis.

Chicago, Ill. L. P. Haskell.

[See "Hamamelis Virginica" in Our Aftermath.—Ed.]

Compilations.

"Gather up the Fragments."

BUSINESS MANAGEMENT IN DENTAL PRACTICE.

It has been the fashion for many years, indeed always, so far as we have observed, for writers in our journals and speakers in our societies, to expatiate in exalted strains on the nobility of the dentist's calling, the duty of self-abnegation, and so on. Addresses to graduates frequently abound in admonitions relating to the dentist's duty to his professional brothers, his patients, his Creator, posterity, *et hoc genus omne.* It occasionally happens that a young graduate is dismissed with a few parting injunctions of a pious savoring. But, to the best of our knowledge, no one has ever undertaken, in an address or lecture, to specifically instruct the dental student in the matter of properly managing his business affairs. It is of too prosaic a character to be dealt with in a valedictory address. But if a post-graduate course could be arranged in our dental schools, in which, five years after graduation, a series of lectures on this subject were proposed, we doubt whether the idea could be received as too utterly preposterous. We do not, however, look to see it attempted, for the present, at least.

And yet it is a truth which must be admitted by every thinking man, that success—using the word in its full significance—is, in any profession, as much dependent on adherence to business methods and principles, as in mercantile pursuits. The young dentist, fully equipped for the practice of his professional duties, and confident of his ability to excel, only too often finds himself in a year or two, hemmed in and embarassed by the claims of creditors and the apathy of debtors. He early discovers that the favor of his patronage is a matter of some concern to rival tradesmen, who smile blindly at him over counters, and can hardly do enough for his accommodation, so long as his purse is in sight. He seldom gets very deeply in debt to any one tradesman, because, as he soon discovers, he is classed among those rated in business circles as "good for small amounts." He receives statements of his accounts promptly on the first day of the month, and is visited by a collector as promptly on the fifth day. If he has had no experience in mercantile circles, he may perhaps be surprised and possibly a trifle offended at this. It does not accord with his own practices. These vary according to circumstances. If a wealthy patron has incurred a large bill for services, the dentist sometimes, through motives of policy, not very clear even to himself, indefinitely defers asking payment. He suspects that his patron may be startled at the amount of the bill, so he allows six months to pass while he is trying to summon courage to present it. Then one of two things happens; he receives a check for the amount, and perhaps a pleasant word of commendation, or, some objection is raised. In either case, the dentist thinks that he might as well have presented the bill at the end of the month. The truth of the matter is, he might *better* have done so.

The dentist makes a serious mistake in not adopting the prevailing custom of the business community in which he lives, as regards his bills. Indeed it is a question whether he ought not to expect to be exceptionally favored, to receive special preference in the settlement of his bills. The tradesman who caters to the fancy perhaps quite as much as to the necessities of his customers, would hardly seem entitled to distinction over the dentist, who ministers to the relief of suffering. So then, the dentist who fails to be at least equally prompt with business men in sending his bills, is very likely to discover that his good nature is being sadly imposed upon.

His bills will not be regarded in the list of those which *must* receive attention, and he will never know upon whom to depend for payment. This irregular state of affairs must inevitably work to the detriment of every professional man. It is all wrong. The dentist, whose income is at best small as compared with that of most others who undertake the entire responsibility of a business, can least of all afford to wait long for his returns. Let every beginner fearlessly adopt a policy of sending bills at stated intervals, and then respectfully remind the delinquents at stated intervals. There is everything in this last feature of collecting bills. Do not let matters drift along indefinitely. Call again, in a week or two, even though you feel assured of disappointment. By faithfully adhering to such a course you will avoid the disagreeable and disheartening experience of many young men, who find themselves at the end of a few years with hundreds of dollars worth of uncollectable bills. It is a duty every dentist owes himself, his family, and his patrons, to attend to these outside features of his business. How can any man sustain a resolution to do his very best for a patron whom he suspects has no definite expectation of paying him?

He may expect demoralization for a while, but defeat, if not ruin, will ultimately overtake him.

This is but one of many points in the management of a dental practice, which should receive serious consideration. The success which pertains to the realization of a lofty professional ideal, is, we need not say, of paramount importance. But it includes, and is dependent upon the other idea,—successful business management,—to a larger degree than is suspected by many.—*The Med. & Dental Journal.*

Now while strikes are in vogue, physicians should strike against waiting for months, and sometimes years, for their hard-earned and well-earned fees. This custom obtains mostly in the country and small towns, and is due chiefly to the neglect of ordinary and proper business methods by the older practitioners. It bears particularly hard against young practitioners who are struggling for a start. All should unite to abolish this custom. The practice of medicine is a *business* as well as a profession, and business methods should be adopted by it. If this is done the community will respect it even more highly, and its prosperity will be vastly increased. Those who devote themselves to suffering humanity must live, and they cannot live on faith and promises. A profession that does as much for charity as the medical profession does should be paid promptly by those who are able to pay. Collect your bills promptly, gentlemen.—*Med. World.*

Editor's Specials.

"Write the Vision and make it plain."

OHIO STATE DENTAL SOCIETY.

The annual meeting is to be held, October 26th, at the great railroad center, Toledo. Toledo is a good place to go to; and it is easy to get there. For these, and for other reasons, we expect the coming meeting to be a grand success.

We hear that the profession at Toledo and vicinity are wide awake, and ready to help on with the good cause. And further, the meeting is to be held at the headquarters of this Journal; and all in the profession know what that means when they think of R. & R., not to speak of their genial and efficient assistants.

The order of exercises may be found on another page. It promises good results. Let all members, and visitors as well, be ready to make its consideration profitable. Let no one wait till the day of the meeting to prepare himself for taking part in the discussions. This cannot give profitable results.

But nothing we can say, in this connection, will avail much, but we trust the place, the time of year, etc., will insure good attendance. Go and see for yourself, reader, and then you will know how matters stand.

APOLOGETIC.

The reader will notice a lack of editorial writing in this number. He may like it all the better, and we hope he will. But we wish to explain that, for a month past, we have been closely engaged in watching the trial of Charlie Morris for the murder of Dr. J. Douthett, our brother-in-law. For his murder, he is indicted for "murder in the second degree"; while for the killing of Mrs. D. the charge is for "murder in the first degree." A trial for this pending, made it rather important for us, as next akin, to watch the course of this, by way of learning important points for future use. We do not think, however, that the absence of our own pencilings hurts this issue of the Journal.

Societies.

"Wherewith one may edify another."

OHIO STATE DENTAL SOCIETY.

The second annual meeting of the re-organized society will be held in the Council Chamber, Masonic Temple building, Toledo, commencing Tuesday, October 26, 1886.

Subjects for discussion: 1. What Should be the Treatment in Cases of Impacted Third Molars. Paper by C. R. Butler, M.D.

2. Method of Investigating the Decay of the Teeth.

3. Obtundents for Sensitive Dentine—their Value and Mode of Action.

4. Materia Medica and New Remedies.

5. Filling Teeth by Herbst Method. Demonstrated by Dr. Rehwinkel.

6. New Methods of Supplying Artificial Teeth. Demonstrated by C. H. Land and others.

7. Correction of Oral Deformities. Demonstrated by Dr. Geo. W. Keely.

Exhibition of new instruments and appliances at such time as may be determined by the Society.

The State Board of Dental Examiners will meet the same day, 12 o'clock noon, at the Boody House, Toledo.

Candidates for examination should report promptly to the Secretary of the Board, Dr. E. G. Betty.

Officers: President, F. H. Rehwinkel, Chillicothe; Vice-President, H. H. Harrison, Cadiz; Second Vice-President, N. S. Hoff, Cincinnati; Recording Secretary, J. R. Callahan, Hillsboro; Treasurer, Geo. W. Keely, Oxford.

Board of Directors: H. A. Smith, J. Taft, C. H. Harroun, A. F. Emminger, D. R. Jennings, C. R. Butler, F. A. Hunter, W. R. Lilly, E. G. Betty, F. C. Runyan, M. H. Fletcher, Chas. Welch.

Committee of Arrangements: C. H. Harroun, B. R. Taber, Jere E. Robinson.

Committee on Publications and Voluntary Essays: J. Taft, E. G. Betty, J. R. Callahan.

Committee on Membership: C. R. Butler, C. H. James, F. C. Runyan.

Committee on Revision of State Dental Law: C. H. James, H. A. Smith, F. H. Rehwinkel, A. F. Emminger, Jere E. Robinson, C. H. Harroun, H. H. Harrison, J. R. Callahan, F. C. Runyan.

Board of Examiners: J. Taft, President; E. G. Betty, Secretary; H. A. Smith, C. R. Butler, F. H. Rehwinkel.

CENTRAL ILLINOIS DENTAL SOCIETY.

The fifth annual meeting is to be held at Peoria, Tuesday, October 12, 1886, continuing three days.

The subjects for discussion are, 1. Some Thoughts on Anesthetics, paper by Dr. H. H. Fitch, Pekin.

2. Report of Committee on Dental Literature, opened by Dr. J. D. Moody, Mendota.

3. Bridge-Work, paper by Dr. G. V. I. Brown, St. Paul, Minn.

4. White Cements, paper by Dr. W. H. Taggart, Freeport.

5. New Remedies, paper by Dr. G. D. Sitherwood, Bloomington.

And clinics by, (1.) Sam'l A. Campbell, Mattoon. Central incisor crown.

(2.) K. B. Davis, Springfield. Artistic arrangement of artificial teeth.

(3.) E. C. Stone, Galesburg. Gold filling without separation.

(4.) Garrett Newkirk, Chicago. Root canal filling.

(5.) S. W. Lakin, Eureka. Building out central incisor, gold screws, Watts's crystal gold, Holmes's mallet.

(6.) J. M. Gallehugh, Chenoa. Upper front tooth,—Williams's soft gold, Holmes's mallet.

(7.) Louis Ottofy, Chicago. Heroic treatment of blind abscess.

(8.) G. S. Salomon, Chicago. Building out central incisor, electric mallet.

(9.) M. H. Patten, Springfield. Rapid filling with gold.

(10.) T. W. Brophy, Chicago. Bicuspid or molar, using Brophy's matrix.

(11.) K. B. Davis, Springfield. Artistic arrangement of artificial teeth.

Books and Pamphlets.

ANNUAL DENTAL DIRECTORY and Official Register of Dentists of Iowa, Illinois, Missouri, Wisconsin, Minnesota, Nebraska, Kansas, Texas, Dakota, and all the Territories. Published by authority of the State Boards. A. O. HUNT, D.D.S., Iowa City, Iowa.

In addition to the list of names there are copies of the dental laws of the States named and a list of dental journals.

CONSTITUTION AND BY-LAWS of the Ohio State Dental Society, as reorganized. May be had by addressing the Secretary, Dr. J. R. CALLAHAN, Hillsboro', O.

TRANSACTIONS OF THE CALIFORNIA STATE ODONTOLOGICAL SOCIETY, 1884–5.

THE PROGRESSIVE AND RETROGRESSIVE PHYSIOLOGICAL METAMORPHOSES OF THE JAWS AND TEETH, by DR. JOHN J. R. PATRICK, Belleville, Ill. Reprinted from the *Cosmos*.

TRANSACTIONS OF THE ILLINOIS STATE DENTAL SOCIETY, 22d Annual Meeting, Rock Island, May 11 to 14, 1886. H. D. JUSTI, Chicago.

Received for review:

DENTAL SCIENCE.—INGERSOLL.
CATARRH OF THE UPPER AIR TRACT.—SEXTON.

Our Aftermath.

WHAT CAN WE CURE?

We select the following from a communication to the editor of *The Medical Record*, by G. M. Dewey, M.D.:

When one takes up a new work on the practice of medicine and contrasts it with one written a century ago, he finds far more diagnosis and pathology, but less therapeutics. A more accurate account of the part played by drugs in the cure of disease has entombed a good many specifics. Whole classes of remedies are left out of modern therapeutics. Others, while retaining a feeble existence, are destined to go sooner or later.

If we have been nature's adjunct in her extremity, we have filled our mission.

"Like blind men fighting in the dark,
They never fail to miss the mark;
When death doth fail, the doctor's sure
To meekly stand and claim the cure."

A doctor's faith in physic is the measure of his intellect. It is always in inverse proportion. Confidence in God and nature points to large comprehension.

When we look upon the countless millions who have lived their allotted time undoctored and undrugged, our faith in physic weakens. With all our knowledge, all our skill, we give out at threescore and ten. The divine appointment of death robs us of Utopian hope in drugs. Impossibility of proof of demonstration is at the bottom of endless controversy in medicine and divinity. We all agree about the multiplication-table. Truth is mightier than lore—than authority.

The strife between nature and art in the cure of disease has resulted in a victory for the former. Nature, unadvertised, has won a thousand trophies to one of art, whose seas of ink have been drained to prove one cure.

Corks, Ether-tight.—Gelatin, 4 parts; boiling water, 52 parts. Dissolve, filter, and add ammonium bichromate, 1 part. Coat the corks with the solution and expose them for several days to sunlight.—*National Druggist.*

A Supposition.—One of the most humiliating experiences in a man's life is to sit in a dentist's chair and have him bore up six or eight inches into the head without noticeably interfering with the brain which was supposed to fill the upper story.—*Norwich Bulletin.*

Corks become impervious by soaking for several hours in a solution of half an ounce of glue or gelatin, six drachms of glycerine and one pint of water at 122° F., and then are rendered nearly proof against acids if they are dipped, after thorough drying, for ten or fifteen minutes in a melted mixture of four parts of paraffin and one part of vaseline.—*Druggist's Circular.*

Our Duty.—The dentist has no right to extract a tooth just because his patient wants it done, or to perform any other operation unless it is best for the good of the patient. It would be his duty rather to refuse to render such services than consent to perform any operation which in his judgment is not best.—*Southern Dental Journal.*

Atropia Hypodermically to Prevent the Heart Depressant Effects of Chloroform.—Dr. J. C. Kerr in *Southern California Practitioner*, says, this drug is physiologically antagonistic to chloroform, it paralyzes the termination of the pneumogastric nerve in both heart and lungs—as proven by Drs. Ringer, H. C. Wood, and others—and stimulates the sympathetic, which is exactly the reverse action of chloroform. I therefore concluded to try the hypodermic injection of one-twentieth of a grain of atropia at the next opportunity and watch the result. The subject was a lady, having already a weak heart and in a run down condition from the effects of malignant disease of the breast (the skin being considerably involved). I gave her the above dose of atropia hypodermically, and then began the administration of the anæsthetic. She took it without a murmur; there was no trouble in breathing, no blue lips or nose, and the heart's beat was regular and even stronger than usual, and I completed the operation without a single bad symptom.

This was the first encouragement, and I concluded to try it in every case where an anæsthetic was needed, which I did with similar results.

Care must be exercised, however, against too large doses of belladonna, lest the sympathetic nerve force becomes exhausted by over-stimulation.

Hamamelis Virginica.—The enormous sale and mysterious properties of hamamelis have led us to undertake an investigation of the drug. The results which we have reached with hamamelis are in accord with those of Dr. Hector Guy, of Paris, who came to the conclusion, as the result of numerous experiments, that hamamelis virginica is not toxic, that it has no special physiological action on the vascular system, and that it contains no alkaloid. We have shown that there is a very large percentage of tannic or gallic acid in the fluid extract, and the results which have been obtained by some physicians by the use of this fluid extract in cases of hemorrhoids and varicose veins are apparently explained by the presence of the astringent principle. The tannic acid, of course, would not come over in the distillation, therefore the much used and still more lauded witch hazel, or the so-called distillates of witch hazel must depend for their virtues upon the alcohol which they contain and the faith which they inspire.—J. Marshall and H. C. Wood, *Therapeutic Gazette.*

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. VI. NOVEMBER 1, 1886. No. 11.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

SOUTHERN DENTAL ASSOCIATION.

EIGHTEENTH ANNUAL MEETING, NASHVILLE, TENN., JULY 27 TO 30, 1886.

[Reported for the JOURNAL by Mrs. M. W. J.]

(*Concluded from October Journal.*)

DR. MCKELLOPS asked what were the probabilities of toleration of an extracted tooth of which the cementum had been trimmed off and the root shaped to fit a socket made to receive it?

DR. MORGAN thought that if the root was polished and the tooth divested of all septic conditions, it might be encysted and tolerated, like a bullet in the body; or it might be ejected like a splinter from the hand.

Subject passed.

The morning session of Thursday was devoted to clinics and the exhibition of appliances.

CLINICS.

DR. W. H. RICHARDS, Knoxville, Tenn., filled a second superior molar, crown and buccal cavity, using soft foil with smoothfaced pluggers. The rubber dam was secured between the teeth by means of beads on the ligature. Justi's speculum or reflector was also used at this clinic.

Dr. G. H. Winkler, Augusta, Ga., filled a second superior molar, crown and buccal cavity, with non-cohesive gold, using the old style forceps-pluggers, which give great power in condensing, with ease to the operator. Dr. Winkler also filled proximal cavities in the central incisors, working from the posterior surface, the fillings scarcely showing from the front.

Dr. Wm. Crenshaw, filled proximal cavities in the central incisors, using the electric mallet. He used Perry's separators.

In appliances, Dr. How exhibited his crown and detachable bridge-work, showing the method of using his seamless collars, and mandrels for shaping them to the necks of the teeth; reducing-plate for contracting the edges; collar pliers, lead anvil, mallet or hammer and other instruments composing the outfit.

Dr. J. R. Knapp exhibited his crown and bridge-work and also his powerful blowpipe, which utilizes nitrous oxide gas in combination with illuminating gas.

Dr. M. W. Williams showed the wonderful power and velocity of his new motor for hand lathe, office lathe, and as engine motor. The pedal has a swinging pendulum action requiring very slight exertion on the part of the operator, all dead centres are overcome, and with a velocity of from five hundred to fifteen thousand revolutions, is under perfect control.

Dr. B. H. Teague was on hand with his *depressed disks* for dressing contour fillings; the form of the disk (which is made in different sizes, and of various grades of sand and emery papers) allows the filling to touch at the grinding surface while rounded to the gum; they are adapted to use on the dental engine or the mechanical lathe. He has also disks of thick rubber, to take the place of the *ball of the thumb* in giving the final polish to rubber and other plates.

Dr. B. Byrnes showed an ingenious double clamp for holding bibulous paper in place of rubber dam during simple operations. He had also a finishing bur for cutting off roots, preparatory to the attachment of crowns—a form of bur which passes under the gum without wounding it.

Dr. J. J. R. Patrick showed the rapid working of his apparatus for manufacturing gold crowns. He has dies and counter dies, and a press for cutting the disks, cupping the crown, crimping or shrinking the edges; raising the cusps, all done in rapid succession, the flat circular piece cut from a sheet of metal being quickly transformed into the molar or other crown formed on one of 48 different models.

PYORRHŒA ALVEOLARIS.

The subject of Pathology and Therapeutics was called, and Dr. R. B. Adair, Gainesville, Ga., introduced by the President as an expert in the successful treatment of pyorrhœa alveolaris, who had come prepared to demonstrate his method of treatment, but had not been able to find a patient!

On invitation, Dr. Adair took the floor. He congratulated Nashville on not being able to furnish a case of pyorrhœa alveolaris on which he would illustrate his method of treatment, which was based on the results of experiments undertaken eight years ago. The surgical treatment of the Rigg's method, though essential in its place, will not restore the lost tissues, and food will continue to be forced into the pockets, thus keeping up the irritation. Plates to protect the parts are difficult to keep clean; the sponge graft often fails. The therapeutical treatment of Dr. Adair is as follows: A few crystals of iodine are dissolved in enough pure wood creosote to make a saturated solution (which improves with age). This applied down in the pockets, and all over suppurating surface, destroying germs and stimulating to healthy action. A glycerode of tannin is next prepared, crystals of tannin being packed in a small wide-mouthed bottle until it will hold no more, when glycerine is added until the tannin is dissolved making a very thick solution. This is applied every twenty-four hours, the parts being first dried. The overflow of saliva forms a tannate of albumen, forming a pellicle which resists friction and seals up the pockets; at the next sitting the pellicle can be pulled off like the inner skin of an egg shell, and healthy granulation will be found. This treatment must be continued daily until the pockets are filled up, and the natural outline of gum tissue restored which will vary from ten or twelve days to possibly a hundred or more, according to extent of denudation.

In answer to questions, Dr. Adair said that teeth, of which two-thirds of the root was exposed would be restored; that tincture of iodine would not answer—it must be the crystals of iodine; that all deposits must first be thoroughly removed.

Dr. B. H. Catching said he could vouch for Dr. Adair's success in his mode of treatment, but that his own method was somewhat different. He believed there was always caries of the margin of the process, which he trims very thoroughly, applying aromatic sulphuric acid. He then applies chloride of zinc—forty grains to the ounce—with a sable-hair brush; having a brush for each case inscribed with the patients name, which is burned when the patient is dismissed.

Dr. G. Chisholm, has been successful with Dr. Adair's method of treatment, but prescribes in addition a mouth-wash, compounded as follows:

Crystals iodine,	3 grains.
Tincture aconite,	3 drachms.
Myrrh,	1 oz.
Tannin,	10 grains.

sufficient alcohol to make 3 ozs., flavored with wintergreen. This is used by putting a few drops on the brush, without the addition of water.

Dr. Salomon asked if this treatment would cure cases due to uric acid ?[*]

Dr. Adair did not know whether or not any of his cases were caused by uric acid, but his treatment never failed to cure; he believed that it was often local, though it might be hereditary.

Dr. Morgan said that any mode of treatment that was not based on a knowledge of pathology was purely empirical and quackish; those who treat successfully should give their views of pathology and cause—not meaning, however, that these gentlemen are practicing from that standpoint, but they should be more thorough and scientific in their statements.

Dr. Crawford asked if the disease might not have its origin primarily in the cementum, the pericementum always making the first outcry. The great difficulty was to differentiate between true pyorrhœa alveolaris and mere local trouble, the result of pure automatism. If the disease depends on constitutional or dietetic conditions, we must go beyond local or topical treatment; the one must have constitutional treatment; this destructive type depending on hereditament is beyond the range of our abilities to cure; if traumatic in character, it is amendable to surgical treatment. There is nothing better to excite healthy granulation than touching with pure carbolic acid, after washing out and drying with an absorbent.

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[*] This theory was suggested by Dr. Reese, of Galveston, Texas, in a paper entitled Uricæmia, read before the Southern Dental Association at its meeting, March, 1885, in New Orleans.

Dr. W. H. H. Thackston said that he must be pardoned if he referred to the pathology of half a century ago, and the teachings of Horace Hayden. Though not called pyorrhœa alveolaris, nor Rigg's disease, the disease was known then. It was then taught that it was the local exhibition of a constitutional disturbance; of a vitiated and impaired nutrition of the general system; it was then called conjoined suppuration of the gums and alveolar process; it might be abated, modified, palliated, and kept in abeyance through the co-operation of intelligent, careful patients, but there could be no radical cure except by the correction of systemic conditions. With all honor to the gentlemen who have fallen upon these wonderfully successful combinations, it was nevertheless necessary to combine general remedial with local and surgical treatment.

Prof. J. Taft being enthusiastically called for, said that nomenclature was an important point; names which were not appropriate were often adopted, becoming fashionable or customary. For the disease under consideration, the name Rigg's disease was not appropriate, as his treatment was only an extension of what had been done, while the name pyorrhœa alveolaris was stilted, meaning merely a flow of pus from the alveolus. Prof. Taft then described the disease in its various phases and manifestations; the systemic conditions which favor its occurrence; the different theories maintained as to its cause and origin, modes of treatment, and the necessity of knowing what the disease is and what we have to combat, what we want to do before deciding upon course of treatment. He considered peroxide of hydrogen the best agent, preventing decomposition, acting as a germicide if organisms are present. He also recommended salycilic acid in alcohol.

Dr. Thackston thought the reddish-brown deposits found at the apex of the roots of teeth which were perfectly sound, and which was evidently not a deposit from the saliva, nor from the gums—a sanguinary calculus from the blood itself, was due to systemic conditions, and might be, as suggested, due to uric acid. He had found such deposits on the roots of teeth from which the gums had never loosened at the margins.

The President, Dr. Wardlaw, corroborated this from his own observations. He had given specimens of this sanguinary deposit to Dr. Frank Abbott, for examination with the microscope.

Prof. Taft said these were rare exceptional cases. He had never seen these deposits at the apex, and with gums attached at the magin, except where there had been alveolar abscess. Serumal calculus was calcareous material thrown out from degenerated plasm, or pus flow; it was not from the blood, but from decomposing serum exuding through the tissue, and from the blood, or sanguinary, only in that sense.

Dr. J. J. R. Patrick said that chemical analysis would not show any difference in the calculi, the difference was in the mode of deposit, or of throwing out. The salivary was a secretion; the sanguinary a concretion.

Dr. Morgan, (who had been absent during the preceding discussion,) thought there was no absolute cure for this disease except in the extraction of the affected teeth, which suggested the question whether the primary cause was not located in the teeth rather than in their environments. Some writers maintained that the tooth proper embraced only the enamel, dentine and cementum; others included the pulp; others again the investing membrane of the tooth. Does the trouble originate in the cementum? or in the pericementum? Perhaps back of that, for it is hereditary to a large extent. One thing suggesting its location in the cementum is the fact that if the cementum is scraped off and made perfectly smooth, and thus devitalized by its separation from the periosteum, the trouble seems to be removed and the gums heal up. All irritating substances tend to produce absorption. Nature takes that place to relieve herself of trouble, removing pressure to carry on vital action. Whatever the etiology may be, we have first, irritation, then inflammation, then solution of the parts. The incrustations are sometimes not calcareous; soft, pasty matter gives the same trouble—a breaking up of tissue; then a darkish tartar is the result of decomposition of the tissues of the blood—limesalts are carried in the blood, and in the breaking up of blood-tissue the limesalts to be disposed of are crystalized about the neck of the tooth. The question was asked if this ever occurred where there was no fistulous opening at the point of deposit. I say yes, where there has been alveolar abscess. The limesalts crystalize under the laws of chemistry; it is a chemical process. Almost every one has spoken of removing *necrosed alveolar process.* I have been treating this disease for nearly forty years, and I have not seen exceeding six cases where there was any necrosed bone; it is softened—the loose limesalts are carried off by the emunctories, perhaps to be used in building up other portions, but we don't know about that. We find softened alveolar process, but not necrosis. It will all be absorbed which is a physiological process. It is never pathological or it could not undergo a physiological process. Physiological processes relate to living tissues; dead tissues are not absorbed. Living tissues are dissolved, and being brought into solution are carried off in the general circulation by the emunctories. Physiological absorption cannot take place in necrosed bone, and it is rarely found in this disease; I have not seen it in more than perhaps half a dozen cases in my life. I recently saw a man, of bilious temperament, sinewy, tough, elastic; the left, inferior, lateral incisor was loose in the socket. I removed the débris and exposed the naked edges of the alveolus which was dead and necrosed, and this was the only tooth so affected.

One of our grand mistakes occurs in too frequent surgical operations. A tooth gives evidence of pyorrhœa; there are foreign substances around the root; we remove them, and if necessary medicate, and tell the patient to come again to-morrow, when we go through the like process again, when it should have been thoroughly cleaned at the first operation. Then the soft tissues were broken up and blood poured out, forming a fibrous coagulation—a protoplasm which should not be disturbed. When a tooth is extracted, blood coagulates in the socket, and a tough fibrous tissue is produced. About the third day, if we syringe it out, and try with a sharp excavator, it will be found free from blood; with time will be perfectly organized soft tissue, in the socket, and this will be the case in the pockets of pyorrhœa if left alone. Postpone the second operation for ten days and there will be nothing to do for the pockets which were thoroughly cleaned out. We will only have to medicate those points which were carelessly cleaned. A gentle friction on the gums is advisable. Is the periosteum ever reproduced? the cementum ever reproduced? *Never, never;* nature does not do that. The tissue that is formed is not normal tissue; it is largely of the nature of scar-tissue, of lower vitality, and takes on inflammation more slowly. Nature builds up scar-tissue analogous to cartilage, and holds the tooth firmly in place. In all these cases too frequent operations should be zealously guarded against. The cavity made by the presence of an abscess is filled up by comparatively healthy tissue, though never perfectly normal; there will be a little chronic inflammation at the end of the root, and normal tissue would not tolerate the conditions. Nothing is equal to carbolic acid for destroying the fungus growth found on the walls of the pockets, stimulating and producing healthy granulation. Has found Robinson's remedy very valuable, rarely requiring a second application. Considers pyorrhœa alveolaris the local expression of systemic disease. Is hereditary and found in whole families, at every age; treated early in children it is often easily checked and arrested. If neglected the constitution is gradually undermined. Physicians do not understand it. It lays the foundation for delicate health, and many lives are lost from it; the vital forces are reduced. Death is not directly ascribed to this cause but they succumb more readily to any other disease. Had recently a patient supposed to be dying of consumption—an old man of seventy; was thin and bloodless and scarcely able to walk. Having pyorrhœa badly his teeth were taken out, and at once his cough, expectoration and night fevers began to decrease, and he soon gained ten pounds in flesh. In another case a lady gained forty pounds in weight. The disease is akin to scurvy and the same diet is beneficial; feed on the fat of the land provided it is digestible.

Dr. J. Hall Moore asked if the disease could not have been treated and cured retaining the teeth?

Dr. Morgan believed that there was always a predisposition to return, being the local manifestation of constitutional disease.

Dr. Rembert asked if the calculus was equal in proportion, in young subjects?

Dr. Morgan replied that it was of different character; more of a cheesy nature, not dense and gritty, only semi-solid. Cotton moistened with carbolic acid or iodine placed beneath the gum would sometimes entirely cure it in young subjects. For the ichorous discharge, cotton loaded with a mild escharotic, locally, with tonic and astringent treatment, is sufficient. The systemic treatment should be directed to the relief of pyorrhœa, not for the general health, that should be left for the physician, it is not the province of the dentist to treat for disease.

Dr. Rembert asked if he thought hereditary cases could be cured?

Dr. Morgan thought that feeble condition could be overcome.

Dr. J. Hall Moore wished to call attention to one point which had been overlooked by every writer or speaker. He had not seen a single case which had made much progress that was not complicated with catarrh, and he did not think constitutional disease could be cured by local treatment. Often there were no deposits on the teeth, the roots being perfectly clean, bright and polished, but all the other symptoms present; pus exuding from pockets reaching down to the apex, with roughened alveolar border, but neither salivary nor sanguinary tartar; all complicated with catarrh. Had seen one case in which the discharge of pus could not be cured; one after another were taken out, perfectly sound and as clean as a pitcher. This patient had catarrh fearfully. He believed constitutional catarrh to be the cause of pyorrhœa, and that the latter could not be cured until the former was cured.

Dr. Rembert asked whether it was not a mooted question that catarrh is constitutional?

Dr. Moore replied, not in his mind.

Dr. Morgan said that pyorrhœa obtained much more largely in a scrofulous diathesis, whether in the blood or on the lungs, and was more frequent in blondes. He would not attempt to cure the disease until a physician had given constitutional treatment.

On motion, subject passed.

Dr. B. S. Byrnes, (Vicksburg,) read a paper entitled Incidentalities, or incidents of office practice. One case of periostitis from retained dentes sapientia; another of an imbedded carious tooth; another of a bicuspid held under a retained temporary molar in a patient twenty-two years of age; a mass of salivary calculus, as large as a molar with its roots, attached to an inferior central incisor; also several operations in filling, use of cocaine, etc.

Dr. Theo. Johnston read a paper entitled

GOLD, COHESIVE AND NON-COHESIVE.

He said that the processes employed in preparing gold, for the use of the dentist, were not generally familiar, but he thought they should be taught in every dental college, in the course on chemistry. If we knew why our gold is or is not cohesive, we should have less trouble in handling it. For his own information he made researches, and obtained facts which had satisfied him as to the principles involved in the preparation of gold. He considered the term cohesion, as employed by the dentist, a misnomer. Cohesion means that the particles are united in such a manner as to resist attempts to separate; the pieces of so-called cohesive gold can be made to unite into a solid mass so perfectly that the eye will be unable to detect the line of union, but it is done by welding: there is a great difference between cohesion and welding; very few metals will weld. Gold has more different properties than any metal, but absolute purity is necessary for welding. The processes employed in refining and preparing gold for the dentist's use, were then given in detail, and the subject opened for discussion.

Dr. Morgan congratulated the Association on having a young member capable of producing such a commendable paper, although he differed from him in some points. Gold will weld perfectly, even if alloyed with 6 per cent. silver.

Dr. Salomon said that three, six, or even ten per cent. of platinum in gold will not destroy its welding property, though it makes it very hard; with from three to six per cent. it is very easily worked and very cohesive.

Dr. G. H. Winkler uses platinum-gold cylinders to resist wearing, and where it is not desirable for gold to show; the platitum whitens it, so that it is scarcely perceptible even in restoring one-third of a front tooth.

Dr. Rouneau uses the platinum-gold foil for the same purposes. After some discussion by Drs. Morgan and Johnston on the subject of latent heat, the subject was passed.

Dr. Cranshaw called for the subject of Operative Dentistry which was temporarily passed. He spoke at some length in defense of the electric mallet and of the positions taken in his paper, the speakers in the previous discussion maintaining their several positions.

The venerable Dr. Louis Chisholm, of Nashville, said that though he had not been engaged in active practice for many years he enjoyed the discussions as much as ever; it reminded him of the wordy fights of days gone by. *Demonstration* was the only witness that gave evidence to any fact, or truth, or science; demonstration was the witness that would always testify to the truth. There was but one essential point in gold fillings, and that was to have the margins perfect, so that no moisture can enter; the least moisture will undermine the whole.

Dr. Crawford thought the main point was proper impact, failure being due to imperfect condensation, but this must be obtained with the minimum degree of force; too much force interferes with the physiological functions of the soft structures; many teeth are beaten to death by the mallet.

Dr. McKellops thought that for that reason, the mechanical mallet was preferable to the electric mallet. In the former the blow can be perfectly adjusted to any degree of force. The blow of the electric mallet is too harsh and severe.

A paper on the subject of Food in Gestation and Lactation, by Dr. Bissell, S. C., was received too late for reading, and was read by title, and referred to the Committee on Publication.

ABNORMAL TOOTH DEVELOPMENT.

Dr. B. H. Catching gave the history of a remarkable case of abnormal tooth development, Miss Julia Wells, of Atlanta, Ga., born in August, 1871, (premature birth at six months, very small and very delicate). At the age of seven months began teething, and soon had a full set of small, soft teeth, which were all lost in three months. They were soon replaced by others, the full set being erupted by the age of fifteen months; they crumbled like chalk, and were all gone in six weeks. At the age of two years and a half she weighed ten pounds, and had a third set of teeth. She suffered constantly from them. Dr. Moore Cole extracted two or three, and Dr. Catching extracted twelve; some of them had small roots. They were all removed and she had no more teeth for several years. At the age of seven she weighed thirty pounds, and had four new teeth in the front of the upper jaw, but they were mere shells sticking in the gum, and were picked off by the finger nails, and she was toothless again till the age of eleven when she began teething again. Up to the age of eight months she was fed only pure cod-liver oil and lime three times a day. She is now budding into young womanhood and is as stout and healthy as other girls of her age. Casts of the mouth taken at different times were exhibited. Dr. Richards suggested that duplicate casts, with the history of this very remarkable case, be deposited with the Tennessee Historical Collection, and Dr. Catching was requested to furnish them.

At the suggestion of Drs. Chisholm and Morgan, Drs. E. S. Chisholm, Richards and Wright were appointed a committee to take into consideration the formation of a museum for the Southern Dental Association.

This being the last of scientific business before the Association, the selection of time and place of next meeting, and the election of officers was next in order.

After some eloquent remarks from Dr. Thackston, who had come as a delegate from Virginia, entreated with a cordial invitation from the mother State, which the Association greeted with hearty applause, the Secretary was instructed to cast the vote in favor of Old Point Comfort, Va., as the next place of meeting. The time of meeting was left in the hands of the Executive Committee, with authority to change the place of meeting to some other point on the Virginia beach, if found more convenient.

Election of officers: Dr. W. H. H. Thackston, Farmville, Va., having received a majority of votes was declared the next President of the Southern Dental Association, and the vote made unanimous.

Dr. B. H. Catching was elected First Vice-President; Dr. J. R. Knapp, Second Vice-President; Dr. W. H. Richards, Third Vice-President; Dr. Crawford, Cor. Secretary; Dr. L. B. Dotterer, S. C., Rec. Secretary. (Dr. Holliday having persistently declined a re-election to the office he has so ably filled.) Dr. H. A. Lowrance re-elected Treasurer; Drs. J. Hall Moore, E. S. Chisholm and J. R. Woodley, Executive Committee.

At the afternoon session Dr. J. Hall Moore read a letter from Dr. R. Finley Hunt, requesting the appointment of a committee of three to confer with a like committee from the National Dental Association—the latter committee consisting of Drs. R. Finley Hunt, J. H. Coyle and E. S. Chisholm. After some discussion the matter was laid on the table.

The gavel, which he had wielded with grace and dignity, was ordered suitably inscribed, and presented to the retiring President; the usual votes of thanks were passed; the officers elect installed, and the eighteenth annual meeting of the Southern Dental Association came to a close.

PROFESSIONAL POLITENESS.

BY W. L. ROUSE, M.D., PAINTERSVILLE, O.

[Read before the Xenia Academy of Medicine.]

Aware that I am addressing men who have spent the best years of their lives, in preparing for the active duties of one of the most arduous and exacting of professions. I will not include in my paper, any allusion to that happy family, ignorance, poverty, rags, and moral depravity, that sweet family circle, frequently visited by the Health Officer, a hint to the wise is sufficient. You may bray a fool in a mortar, and his dust will smell of folly.

It must not be thought that legitimate manners can be taken up and laid off, like an overcoat, to be put on or off in a moment. A noble and attractive every day bearing comes of goodness, and sincerity, of refinement, and these are bred in years, not moments. It is the fruit of years of earnest, kindly endeavor to please. It is the crowning perfection of a noble character. The mother has much to do with implanting the seed that will germinate and bear this golden harvest of affability and good breeding.

Daily experience shows that civility is not only one of the essentials of success, but it is almost a fortune in itself; and a man of inferior ability, who has this quality in perfection, is almost sure to rise; while without it, one possessed with the highest qualifications fails. "Give a boy address and accomplishment," says Emerson, "and you give him the mastery of palaces and fortunes. Wherever he goes he has not the trouble of earning or owning them, they solicit him to enter and possess." Genuine politeness is almost as necessary to enjoyable success as is integrity or industry. And to matter of fact people, who call for facts, as to whether it pays; this is of the utmost importance.

Why is politeness like small-pox and scarlet fever? Because it is contagious. Non-contagious politeness is malignant. This may be seemingly absurd, yet it is true. The rarity of common politeness is lamentable. Like common sense, common politeness is the scarcest commodity in the human market. Everybody talks about it, but few put it into practice. Beautiful theories appear much better when put into practice.

Let us see how it affects us professionally. Many men of deep learning and fitness, have failed in the profession by being the unhappy possessors of a rough, uncouth, blunt address, like the diamond in the rough, trodden upon, and passed by, by the common herd of humanity. Occasionally some minds are more penetrating, will discover the merit and reward it; but the throng will discard your genius, for the affable, polished doctor, whose politeness and cheerfulness warm their hearts, and irresistibly attract them and inspire their confidence. You may say his mannerism is only skin deep. The polish on your boots is less than skin deep, yet every one wants his shoes polished. Urbanity is often, we are aware, put on for dirty and depraved purposes, as the infamous tricks of the libertine, of all earthly villainies, his is the most hellish.

For the medical fraternity, politeness, cheerfulness and the charity that thinketh no evil, are the saving graces. Rudeness and coarseness in a physician are inexcusable. If a doctor visits his patients, with a long, sad face, funerals will follow him wherever he goes. If he salute his patients politely and has a word of good cheer for each, they will always be glad to see him, and look hopefully for his return. True politeness ever hath regard for the comfort and happiness for others. "It is," says Witherspoon, "real kindness kindly expressed." Even the bitter quinia can be easily taken when enclosed in a perfect capsule. Doctors sometimes carry cheerfulness to extremes, even telling stories to dying patients. It has been my rule in life to be cheerful, and will die cheerfully if possible; but I don't want some fool of a doctor telling me a silly story on that occasion.

"Fools rush in where angels fear to tread," is more fatally illustrated in the practice of medicine than in any other calling. Any fool can be reckless in the use of dangerous remedies, while the educated man would feel his way with caution. You do not have to tell your patient, with a visage long drawn out, what you are giving, or attempt explanations. The wise physician, in an ignorant emergency, will keep his own secrets. Should the patient ask, as he is sure to do, what the doctor is giving, respectfully, and in such a manner as to command his respect, let him understand that is your own business, the patient's business is to take the medicine and ask no questions. Do not understand me that the physician should have any secrets retained from the profession.

And we should not forget that the doctor should be a punctual man. "Punctuality," said Louis XIV, "is the politeness of kings"; and he need not have confined his remarks to the blood royal, for of all men, the doctor should have this important element of character. Not only should a person be punctual in all his express engagements and appointments, but in all his implied ones as well. If he has a regular office hour, let it find him there. When you have made an appointment with a physician, as in a case of consultation, you owe him punctuality. You have no right to waste his time, if you have your own.

The physician should not neglect his dress, for as Shakespere says, "The apparel oft' proclaims the man." It is a duty you owe yourself, your patrons, and your family to dress with propriety. Do not understand me that I would have you dress like soulless dude, or dandy, who, like the cinnamon tree, is worthless after the bark is removed. A coat that has the marks of use upon it, is a recommendation to people of sense. Avoid anything "loud." Dress as becomes your station in life, and if I may write it, care for your linen. Never attend a patient professionally when you are enclosed in a dirty shirt. Some have every appearance of being gentlemen, but one glance at the condition of their finger nails will remind you of a transfer of real estate. Elegance of attire and an uncleanly person make as disagreeable a contrast as can be imagined. It is the evidence of a true gentlemen, when the clothing worn is in order and suitable. Dress, and the way it is worn, is an indication of character. "A man can smile, and smile, and be a villian still." Flunky doctors, are of all things, to be despised. I remember one I met years ago, who always said "Yes, sir," to every remark you made, never advancing an idea or thought, or expressing an opinion of his own, but always ready with his everlasting "Yes, sir." There is nothing more to be admired than a manly firmness and decision of character that is able to say no.

The best way to deal with a fool is to hit him a sure shot, or he will get the upper hand of you. Profanity will not move him; and a polite man does not believe in profanity as a motive power. It only shows what a fool a man can make of himself.

About the most difficult place to be polite in, is when called upon to treat a hopeless case of nothing the matter. And such cases, as you are all aware, require great wisdom and tact for their successful treatment. If you let an ignorant patient find out that you don't know everything, he at once concludes that you don't know anything. He will then hunt for some one who knows it all and will find him. Such cases are juicy ones for quacks.

Tobacco comes into the discussion of politeness. There is no way to avoid it. Can a man be up to the standard when he can cooly spit tobacco juice in the pure, honest, unsuspecting face of mother earth? No sane man can think it politeness to smoke in the presence of ladies; and a man is far gone, indeed, when he can approach the bedside of a patient with his cheek loaded with a huge "quid," which demands frequent attention to the cuspidore. "Gentlemen," says the late lamented Dr. James Graham, "don't smoke at all; but if you do, don't poison the free air of God with a poor cigar. Smoke good tobacco or none."

People have no longer sublime confidence in a drunken doctor, as once was the case. Such physicians were at one time held in great esteem. "Dr. J., or Dr. S., is the best doctor in the country; what a pity he drinks!" It is a great pity he drinks, both for himself and for his patients. A drunken man, whether a physician or not, may kill any one that comes in his way. The practice of medicine demands all our serious and sober self-possession. Reckless drunkenness, in any other man than a doctor, might have its palliation. But a drunken physician is an unmitigated outrage on sick peple. All this stuff about drinking fellows, being genial, jovial, and whole-souled, will not stand, when brought to apply to the members of the class you personally know. They may squander their money recklessly with boon companions, without a thought of the unpaid bills of the butcher and baker, and be "hail fellows well met," with the "fill 'em up again," "don't go home 'till morning" class, but how is at home in the family circle? Is it not uncommon to see him use common politeness there? Let me state to you if the practice of politeness does not begin at home, it will be only spasmodic elsewhere. You may deceive the public for a time, but the family soon feel that there is no heart there, and without heart there can be nothing but dregs and bitterness. A ship-wreck at sea, with great loss of life, is cheerful compared to the family wreck.

"With malice toward none and charity for all," I will close this paradoxical paper, by giving you the opinion of my political friend, Allen O. Myers, on plagiarists: "Gamblers or thieves seldom die rich; and a literary thief is no exception to the rule. You may try and pass yourself off on the public as a writer, but if you can't write, and depend on the scissors for your reputation, it is only a question of time before you are found out and branded forever as a common thief. Whatever you do, be square. It is no disgrace to be able to handle the scissors well, but if you can't write don't claim the brain work of others as your own. Live on your own merits as a man, and if you possess no merits lie down and die as soon as possible for the good of yourself and the world at large. There are sticks enough without you."

I am indebted, in this article, to E. Allen, and extracts from a paper by Dr. E. Williams, of Cincinnati, read before the Kentucky State Medical Society, at Winchester, Ky., June 22, 1886.

RETROSPECTIVE.

BY THE EDITOR.

A COMMON practical joke in my native neighborhood consisted in arresting the progress of any one who seemed to be in a great hurry, by some trivial or unimportant inquiry. A boy at a gallop was apt to hear the salute, Hello, there! did you meet Mr. Peleg Q. C. McTweezle? Of course he would answer in the negative, only to be told, Well, no difference,—I only wanted you to stop and look how far you have gone.

After all, the idea was an old one. The most prosperous people of a certain period in history was the nation of Israel in the land of promise. And in the days of their swiftest progress, each one of them, once a year, had to bring the evidences of his prosperity and lay them before the priest, and publicly confess over them, "A Syrian ready to confess was my father." And long after, the same race is commanded to "Look unto the rock whence ye are hewn, and to the hole of the pit whence ye are digged."

Our profession has advanced at a rate almost without precedent; and it may be wise to halt, or at least look back, and see how far we have gone. Fortunately this is practical, as men still in active, energetic practice, saw it while still unhewn in the "rock," still deep down in the "hole" whence it has been digged. In proof of this the reader will recall such names as Dr. Robinson, ("Uncle Jerry"), Drs. Durnelle, Taft, Spalding, Allen, and others.

General surgery sprung out of a hole, deep, dark, and besmeared with the mire of ignorance. The blacksmith, the butcher, and the tinker combined their forces into a single germ, planted it, and up grew the surgeon. In a similar way, the surgeon, the physician, the silversmith, the butcher, the sculptor, and the watchmaker, and the general tinker developed the dentist.

Forty-five years ago the writer of this received a letter from a former classmate, in which was a statement like this: "Mister! You're studying medicine. All right; but the first thing you'll know I'll be a real, thorough, scientific dentist." To which I responded "All right." But still the thought came up, How can he accomplish his aim. I could look forward to medical colleges, hospitals, clinical instructors, etc., not to mention the assistance to be gained from private medical preceptors. The rock whence dentistry has been hewn was then almost untouched by the tools that were to shape its crude mass into the piece of grand sculpture known as the dental profession.

Previous to the receipt of the letter mentioned, I had seen but one dentist. I saw him removing the tartar from a man's teeth with an instrument made from a nail. He had ground the projecting portion of the head of the nail to an edge, and by driving the point of the nail into the end of a short stick, and whittling the stick to the desired shape, he had a scraper, which he regarded as quite efficient.

This dentist didn't fill teeth at all except on the grinding surface of molars and bicuspids. Into a cavity in such position he sometimes forced a grain of bird shot having a diameter to fit the cavity. But I saw several specimens of his handicraft in mechanical dentistry. It was not called dental prosthesis then; and indeed, it seemed a misnomer to call it *mechanical.*

In making the pieces I saw he had used for teeth small blocks of bony material carved, ground or filed into shape, as he saw fit. In one or two he had used human teeth. In all, the representatives of the teeth were attached to silver wire. The wire passed along over, or under the alveolar ridge, slightly inside of its center. Each end of the wire was bent around a tooth, the bent portions representing clasps. Each artificial tooth was fastened to a short piece of wire similar to that used over the ridge, the attachment being secured by tinners solder. The free ends of these wires slightly flattened and by the same kind of solder. They were attached to the main wire. The piece was then ready for insertion, not requiring filing, scraping, polishing, or burnishing. I never saw any of the pieces in the patients' mouths, the pocket seeming to be the favorite place in which to keep them. I have been told they looked much better in the pocket than in the mouth.

Now when the classmate alluded to above, proposed to soon become a *scientific* dentist, I did not suppose for a moment that he would be similar to the one I had seen, for I thought he had more *art* than *science*, though possessing but little of either.

Before further noticing the career of the classmate, I will refer to some other dentists who made brief sojourns in the village where he of the silver wire resided.

A young man emanating from a rural district in the southern portion of Ohio, undertook to practice dental surgery by visiting the interior towns and villages in search of business. He had a little money when he started out with a few traps in the shape of instruments and materials, but failing to make expenses for self and horse in the first three or four villages tried, his money was reduced to a lonely "fip," equivalent to one-sixteenth of a dollar. Dimes and nickles were not then parts of the "circulating medium." A day's ride would have taken him home, or at least to his starting point; for it is doubtful if he had a home. On paying his bill, and examining the state of his finances, he was much inclined to turn back; and had he done so, his professional career would have closed forever, at least as far as dental surgery was concerned. And how unfortunate this would have proved for the profession, for humanity, for himself, and all concerned, might be imagined, if it were only true that this discouraged, hungry itinerant was to be a member of the first, second, third and fourth dental societies in the world, that he was to project, and afterward own the second periodical publication devoted to dentistry, that he was to found, and for many years teach in the first dental college, with but a single exception, that he was to die full of professional honor and fame, having acquired a name by which, though "being dead he yet speaketh."

But how can the reader imagine all this; for it is true of only the late lamented Professor James Taylor, M.D., D.D.S.

But we left the young man from the rural regions debating in his own mind whether to turn homeward, or press forward. Fortunately he was broad between the ears, and large chested. Brain enough at the base with a strong heart to drive the blood to it, after strong lungs had given it abundance of oxygen—thus equipped, he and his "fip" mounted the horse, and started for the town of the nail and wire dentist.

Leaving without breakfast, it was not strange that a paroxysm of "sick headache" set in, and prevented his being hungry for dinner. This was, at least, fortunate for the horse, as the "fip" was spent for oats, which were fed to the horse from the top of a stump at the roadside.

Leaving the horse to enjoy the oats, he reclined on the grass, to enjoy (?) a settlement of the stomach with the head, the former being required to "cast up its accounts" for the inspection of the latter. While thus delightfully exercised a law student, boarding at the home farm, came along, and, being neither a priest nor a Levite, did not pass by on the other side. Instead being *Wright* and always RIGHT, he found the stranger and "took him in." The emptied stomach being ready, a cup of tea settled matters; and on learning his business, the student, and also his sisters, if not his cousins and his aunts, wanted their teeth filled, and hence set him up in a profitable practice before reaching the town at all. This neighborhood was then, as well as now, called "The Union settlement," though why, is "one of the things no fellow can find out." But the entire community united in befriending and patronizing the stranger, friendships being then established which lasted through life.

Having cared for the dental wants of the "Union" people he advanced on the town, to find his sojourn profitable, much of the success, as he stated to the writer, being doubtless due to the industrious friendship of the popular law-student.

Most of his work then and there consisted in filling teeth, and removing salivary calculus. He never spoke to the writer of having inserted teeth at all; but one of his patrons has more than once described the adaptation of a single tooth to a vacancy in his own mouth, with the law-student and the writer as listeners. By this time the "law-student" had become the distinguished antiquarian, Thomas Coke Wright, Esq.

As described by the patron, the tooth was a human one, a little too large for the space. A hole was drilled through it, the root was cut off, and it was ground to the desired length. Then it was set on the gum after having beveled its sides so that it would go into, but not through the space. Some kind of thong, (he said it was ratan) was passed through the hole, the tooth was set in place, and the ends of the string were woven back and forth through the spaces between the adjacent teeth.

About the time the dentist was ready to leave, the tooth tilted to a horizontal position, the patient was mad, and got out a warrant on a charge of obtaining money under false pretenses. The friendly law-student sent the dentist out to "Union" to do a little more work, and told the constable he was gone. As the horse had been, all these days, quietly grazing in father Wright's clover field, it proved easy for the kind Thomas Coke to send him away, as he did ignorant of the facts about the warrant.

Near the close of their lives, which terminated about the same period, the writer had the pleasure of bringing the parties together, and hearty laughter followed the narration of the scenes described above.

Dentistry was, at that date, only partly hewn from the rock; and the rock was only partly out of "the hole of the pit."

The first upper and lower set of teeth on gold plate made in the village, as I verily believe came from the handicraft of Dr. B. D. Wheeler, then and afterward of Cincinnati. These pieces being for a very popular lady, the wife of a very popular physician, and proving very highly satisfactory, all in need of such work were ready to swear by our good friend, the late Dr. W. He had no trouble in finding all the work he could do during his alloted sojourn in the place, probably one week in each month. But his practice at home grew so rapidly that he soon found it impracticable to divide his time.

Now it is time to return to the hopeful classmate who was so soon to become a "real scientific dentist." He was found at the point where he had made the promise, in a small, unambitious village, on the banks of the Ohio, in his native county, practicing dentistry in a small way. Unfortunately he had an intimate associate, a young, pleasant, affable botanic qua— physician, who spent a considerable of his periods of leisure in persuading him that the regular physicians were ignorant, behind the times, opposed to scientific progress, and hence unworthy of respect. And finding it an easy matter to acquire all the professional knowledge of his companion, and having about succeeded in doing so, he was found quite contented with his professional attainments. This is not strange as his dental knowledge equaled or surpassed that which he found in the few dentists that he met.

It was not difficult to persuade him to make a professional visit to the interior village that had been consecrated by the nail and wire man, the young man found in "Union," and Dr. Wheeler. Forty-three years ago he made it a visit, and was so well pleased that he established an office. Here his associates were educated physicians, etc., and here he was induced to subscribe for a leading medical journal, and thus new light was discovered. His career has been, accordingly, onward and upward ever since.

The office he established in 1843 continues to this day, and is probably in better condition for the best practice.—good work being done with greater ease and rapidity—than ever before. It has continued without interruption all these years, and has ever aimed to keep up with the times in improved appliances, etc. Its originator having established for it an excellent reputation, his successors were probably ashamed to retrograde.

Of some twenty members of our profession who have been connected with it, in some capacity, at least sixteen were graduates; and not less than seven of them have been teachers in one or more of our dental colleges, the founder laboring simultaneously, for several years in the faculties of two of them, discharging the duties of *Dean* in one, if not in both, and I heard no report of failure in duty toward either, nor in any other direction, except that the profession generally regarded his course as suicidal. But it was not generally known that he was taking this extra work, of the two schools, a periodical, a lot of text books,—to say nothing of work outside of the profession, all for the benefit of his health. Away back in the fifties, he had unmistakable signs of tuberculosis—a slight family taint—and he was advised to make himself so busy that he could not find "time to die." This advice he has taken with satisfactory results, and is still threshing away, as if determined that the first thing I am to know, he will be "a real genuine, scientific dentist." He seems to be hardly as hopeful as he was in 1841; but he is likely "to make it," and we should not discourage him.

Quite a number of the former inmates of this office have become well known as contributors to our periodical press. Some of them have practiced in foreign lands; and, upon the whole, it seems that the history of this one office indicates that dental surgery is already able to "look unto the rock whence ye are hewn, and to the hole of the pit whence ye are digged." For the rock is certainly elevated out of the hole, but of course it needs much hewing and polishing in the way of finishing touches. These the profession will doubtless give it, if our professional progress is not arrested by pushing the rock back, at least part way, into the hole of the pit again. For there are a few that hold that our dental profession should receive all its professional education through private preceptors and *medical* schools. Fortunately not many adhere to these views.

In giving, from recollection, the personal and professional history of a single office, as these have been observed by one individual, it is hoped that the younger brethren are able to get a clearer and more satisfactory idea of the early days of dentistry than can well be given by any other method. When they see the founder of the first dental office in the village—now city—under consideration, occupying his present positions of influence and usefulness, and compare the present with the past, as above detailed, they can scarcely realize that the changes have occurred in a single lifetime, and especially, when they see the success of one who had no capital but common sense, ambition, will power and conscience to start with, they will feel a respect for their profession, and for the men that have lifted it out of the pit, that they could otherwise scarcely acquire.

And this village was not a whit behind others. Indeed its population possessed more than ordinary intelligence, owing to the character of the first settlers, and the fact that they brought their pastors and school teachers with them. The start made by dental surgery in this, was similar to the experiences of others all over the state. Let the young practitioners and the students duly appreciate their present privileges; and remember that they are justly expected to surpass their predecessors in proportion.

I have detailed the minutæ of one office mainly, and this because I could better do it. About seven years after the first, a second was established, and is still in existence, its present proprietor having controlled it from almost its beginning. Though not the oldest office, its proprietor is the senior dentist of this part of the state; and is well known as a graceful writer; his only fault in this respect being that he will not write enough, even his best friends being judges.

Some five offices are now found where the nail and wire man once held sway; and with a single exception referred to above, they are manned by young men, who seem to be competent for all professional demands. They seem too much inclined to follow the example of their older brother, in not writing for the periodcals, as they know they should,—especially for the JOURNAL.

STRANGE CASE—TEETH ESTRAY.

BY W. L. ROUSE, M.D., PAINTERSVILLE, O.

[Read before the Xenia Academy of Medicine.]

I WAS called to attend a woman in accouchment, Aug. 20, 1886, white, aged 40 years, had borne ten healthy children, was of the lower class, lived always in the country. The woman had an easy confinement, was sick only about three hours before the child was born. It was a female, with well formed body and head, except the face. The legs were of natural size, the knee joints being quite large, and what is known as double-jointed. The feet were cloven up to the middle and external cuneiform bones, each half terminating in a toe with a nail well formed. There were two joints to each prong of the foot, and the child could place one over the other, and had good action with them even grasping the clothing with them. The hands were badly deformed. The right was divided up to the trapezoids and os magnum; and each side ended in a well formed finger. There was no thumb nor an appearance of one. The left hand had only three metacarpal bones. The ring finger and the little finger were united to the third row of phalanges, ending in two finger nails. There was an appearance of a thumb, but it contained no bones, and was not moveable. The arms were natural and well formed. The face was oval. There was no upper lip. There was a complete fissure of the hard palate, with *no* soft palate. I can hardly call it a fissure of the hard palate, for there was no hard palate upon the left side of the mouth, and there were no tonsils. The nose was in the natural position, with but one nostril and it on the right side. At the end of the nose was a *second nose*, covered with soft, short, light colored hairs. When the child was three weeks old, two teeth came through the skin, on this part, and grew very fast. They dropped out in about ten days after they came through. The child lived nearly six weeks, and died of the effects of improper food which was given it. It was so deformed it could not nurse, and had great difficulty in swallowing; and the parents being very poor, the extreme care which it demanded could not be given it, and fortunately for them, it died on October 5th, 1886.

Compilations.

"Gather up the Fragments."

WITCH-HAZEL.

The history of popular domestic remedies for bruises, sprains, and other minor surgical ills is full of interest, and it shows how much a matter of fashion is the mode of treating these complaints. According to Drs. John Marshall and H. C. Wood, in *The Therapeutic Gazette*, thirty years ago the American housewife gathered the flowers of St. John's wort, soaked them in sweet oil, and made with them a so-called "red-oil," for the solace of aching limbs. Later arnica became the universal panacea, while in recent years this has been superseded by various "extracts" of witch-hazel (*Hamamelis virginica*).

Doubtless physicians have often been obliged to listen to stories of the wonderful virtues of this, the mother's latest favorite, and they have perhaps often wondered whether there was any subtle and mysterious element in this plant which evaded the chemist and the pharmacologist, and was only brought out by contact with bruises and black-and-blue spots of all sizes and dimensions. For our text-books, so far as they have spoken, give no reason for witch-hazel being any better application for injured surfaces than arnica, or alcohol, or a dozen other things.

In *The Therapeutic Gazette* for May last, the authors to whom we have referred report the results of experiments made to solve this problem of the popularity of witch-hazel. [See October JOURNAL.—ED.]

There is a very large percentage of tannic or gallic acid in the fluid extract, and to this and the alcohol it is believed the active properties of hamamelis, such as they are, are due.

The famous witch-hazel preparations, therefore, which cure so many diseases, external and internal, appear to be nothing but dilute tinctures of tannin, made odorous by an inert volatile oil. We fear that there is nothing in the drug which will prevent the fancies of fashion, or the exigencies of trade from overturning its supremacy. Mothers may return to arnica, but more likely some new and wondrous extract will take its place. We shall yet write the history of the decline and fall of witch-hazel.—*The Medical Record.*

"THE CLASS OF SPECIALISTS CALLED DENTISTS."

A CORRESPONDENT takes umbrage at a paragraph appearing in *The Record* for April 24th, 1886, stating that "some enterprising dentists have named this" (tartar on the teeth) "'Rigg's Disease,' a condition requiring treatment, in place of the old-fashioned scraping off the tartar." Our correspondent thinks this a "slur upon a class of specialists whose work and literature are proof against such defamatory attacks on their own merits. Rigg's disease, or more properly pyorrhœa alveolaris," he says, "is a disease characterized by purulent discharges from the alveolus and occasioning loosening of the teeth and other pathological conditions familiar to dental surgeons. The disease is very common to certain cachexias, notably the scorbutic. Incident to the progress of the disease 'pockets' or recesses are formed between the roots of the teeth and their alveolar investments; in these 'pockets' 'tartar' or 'salivary calculus' *sometimes*, not always, deposits. Tartar *never* is the *only*, seldom an accessory, cause of 'Rigg's disease!'" No surgeon, we believe, could confound suppurative inflammation of the gums with the more familiar accumulations of tartar upon the teeth, but it will scarcely be denied that of the immense number of persons legally entitled to designate themselves "dental surgeon" but few possess the requisite medical knowledge to treat this or any other disease. Our correspondent himself states that the so-called Rigg's disease depends on constitutional causes, notably scurvy, a disease which the "class of specialists" called dentists are by no means generally qualified to treat. *The Record* has already called attention to the fact that a "specialist" capable of treating diseases of the mouth cannot be turned out by a "dental college" any more than a person qualified to practice gynecology could be graduated from a gynecological college. While there are many workmen, both honest and skilful, among dentists, there are but comparatively few physicians among them possessing a medical education and capable of treating such diseases as arise in connection with diseased teeth. That an oral or dental literature exists is due to the labors of medical men rather than dentists. *The Record* has no wish to disparage the excellent work for which our American dentists are justly famed, but it is to be feared that the too superficial curriculum of the numerous dental schools springing up throughout the country, graduating persons to practice medicine (at least as specialists), will not only contribute to further lower the tone of medical education, but possibly divert attention from the mechanical training every dentist should receive.—*The Medical Record.*

BORIC ACID IN VARIOUS CONDITIONS OF THE MOUTH.

BY A. D. MACGREGOR, M. D.

In *simple catarrhal stomatitis*, a mouth-wash, containing from 10 to 15 grains to the fluid ounce, speedily cures the condition, and exercises the same beneficial influence in the *ulcerative* form, though there, in addition to the rinsing of the mouth, a local application in the form of the powder or pigment, should be made to the individual follicular ulcers. The powder simply consists of finely powdered boric acid, mixed in various proportions with starch; the pigment is a solution of boric acid in glycerine (1 in 4 or 5). In both cases, the addition of chlorate of potassium is advantageous. Nothing I know of is at once so rapid and so efficient, in the treatment of *parasitic stomatitis* or *thrush*, as this remedy. The youngest children do not object to its application, and, occasionally, you have to caution against its too frequent use. For thrush in children, I especially recommend boric acid, either as a mouth-pigment or as a confection. Honey and sugar have both been condemned, as being inadmissable, in combination, for the treatment of thrush; but, so far as children are concerned, I must say I consider a confection (though made with honey), which has been impregnated with boric acid, gains more by its palatableness than it loses by the tendency of the saccharine matter to further the growth of the fungus. The boric acid at once does away with this tendency. Let the pigment be frequently painted with a brush over the patches, never omitting to do it after the food has been taken; or, a little of the confection, simply allowed to dissolve in the mouth; and the days of the fungus will soon be ended. In *pharyngitis*, and *relaxed conditions of the throat*, a gargle, containing boric acid and glycerine, with either tannic acid or alum in addition, ought not to be forgotten. Let me allude to another condition, in which I have found combinations of this substance helpful and grateful to the patient. I refer to the condition in which we frequently find the mouth, tongue, and teeth in severe cases of typhoid fever. The mouth is hot; the lips dry, cracked, and glued to the sordes-covered teeth by inspissated mucus and saliva; the tongue dry, or even glazed and hard, brown or black, crusted with a fœtid fur. Under such circumstances, a pigment, containing boric acid (30 grains), chlorate of potassium (20 grains), lemon-juice (5 fluid drachms), and glycerine (3 fluid drachms), yields very comforting results. When the teeth are well rubbed with this, the sordes quickly and easily become detached; little harm will follow from the acid present. The boric acid attacks the masses of bacilli and bacteria; the chlorate of potassium cools and soothes the mucous membrane; the glycerine and lemon-juice moisten the parts, and aid the salivary secretion. I consider this application well worth a trial. So much for the soft parts; a word in conclusion regarding the teeth. For years I have used the following powder, and can recommend it. Boric acid, finely powdered, 40 grs.; chlorate potassium, ʒ ss; powdered guaiacum, 20 grs.; prepared chalk, ʒ i; powdered carbonate of magnesia, to ℥ i; otto of roses, half a drop.—*Brit. Med. Journal.*

FOR EXCESSIVE PERSPIRATION OF THE HANDS, washing with a saturated solution of boracic acid is often effective.—*The Medical Record.*

CREDULITY AND QUACKERY.

The Popular Science Monthly for October does good service for American children when it pleads for such direction to the teaching of the public schools as shall emphasize common sense and reduce credulity to the minimum. There is no question but that the schools have not checked the credulous element in man so much as they ought with their opportunities. No child can make a reliable man, with intellectual characteristics for self-protection, who is over-credulous. It is a reflection on the work of the public school when the quack and the confidence man thrive, when it is profitable to flood the mails with fraudulent advertisements which only credulous, unbalanced, untrained minds will spend the time to read even. It would be a great economic boon to the country to have the school so far enlarge the common sense of the youth as to save the next generation from the fraudulent art of the quacks.—*Journal of Education.*

NEW LENSES FOR MICROSCOPICAL WORK.

Professor Abbe, of Jena, has made an invention in microscope lenses, which, if correctly reported, will work a new era in microscopical work. After five year's experimenting (rendered possible by a subsidy of $15,000 from the German government) Professor Abbe perfected a new combination which, it is claimed, more perfectly corrects both spherical and chromatic aberration than any previous one. Some of the lenses composing the objective are silicious glass, the remainder being compounds in which borax and phosphorous are leading constituents. These compounds were worked out by Dr. Scott in conjunction with Abbe, and the objectives have been made by Zeiss. Dr. Van Heurck describes them as follows in the *Journal de Micrographie:* "The objective is homeogeneous immersion, of a focal distance of three millimeters, or about one-eighth English measurement. It is not arranged for cover-glass correction, as this is not necessary, that function being obtained by means of the sliding tube of the body. It contains five lenses, and has a numerical aperture of 1.4, which is a trifle less than has been obtained in England and America (1.5), but as far as its optical qualities are concerned it is far superior to anything before made, the new glass permitting the absolute correction of all aberrations. The field is perfectly flat, the minutest object in the extreme edge of the field showing as sharply and clearly as though it were in the center. With the vertical illuminator an amphipleura (silvered) is resolved into pearls—not merely in spots, but over the entire frustule, and with such clearness that these pearls can be counted. In the study of other diatoms I have found details which have hitherto escaped notice. As to the bacteria, details of structure are shown that have never before been seen—details that will without doubt serve to differentiate them by ocular means. Accompanying the objective are eye-pieces, two for direct use and one for photography. They are also made of the new glass and by entirely new optical formulæ."—*Druggists' Circular.*

COCAINE IN TOOTH EXTRACTION.

Dr. McCoy's method is as follows: For use in the hypodermic syringe he has an article of four per cent. solution of hydrochlorate and a ten to twenty per cent. solution to use topically. The syringe should be of the best make, with a fine point, kept sharp. To remove a single tooth where the patient is nervous or the gums tender, he dries the parts carefully, and then applies a ten per cent. solution all around the gum at the neck of the tooth. He then saturates small pellets of cotton wool, placing them between the teeth at the neck of the tooth to be extracted. He then covers the gum on either side with four thicknesses of bibulous paper saturated with a solution of the same strength. These appliances are held in position from five to seven minutes. The gums will then be insensible, and the four per cent. solution may be injected without pain.

If the patient is not specially nervous, and the soft tissues are in ordinary health, the injection may be made at once. The point of the syringe should be inserted through the gum on both sides of the tooth, discharging from two to three minims as near the aveolus as possible. Then the ten per cent. solution should be applied as above described. In from ten to fifteen minutes from the time the hypodermic syringe is used the gums may be lanced and the teeth extracted without pain. The gums should always be tested by piercing them with a sharp-pointed instrument and the extraction should be delayed until they are completely callous.

The anæsthetic effect extends to the tooth on each side, and with a small addition of cocaine three teeth can be anæsthetised at the same time. If a tooth should be broken off in extracting it, the operator should not wait, but immediately extract the root, as the hemorrhage seems to neutralize the effect of the cocaine. The anæsthetic effect rapidly disappears after the teeth are extracted.—*Archives of Dentistry.*

THE INTELLIGENT IRREGULAR.

Upon a certain occasion Mr. Williams (afterwards U. S. Judge for the territory of Iowa) was defending a client, in the interior of Pennsylvania against the claim of a quack doctor (who professed everything and knew nothing), and who had instituted a suit for surgical services, and had marked the suit to the use of another in order to become a witness. The following was developed during the cross-examination :

Counsel—"Did you treat the patient according to the most approved principles of surgery ?"

Witness—"By all means—certainly I did."

Counsel—"Did you decapitate him ?"

Witness—"Undoubtedly I did ; that was a matter of course."

Counsel—"Did you perform the Cæsarean operation upon him ?"

Witness—"Why of course ; his condition required it, and it was attended with great success."

Counsel—"Did you now, Doctor, subject his person to an autopsy ?"

Witness—"Certainly ; that was the last remedy adopted ?"

Counsel—"Well, then, Doctor, as you performed a *post mortem* operation upon the defendant, and he survived it, I have no more to ask, and if your claim will survive it, quackery deserves to be immortal."

INTRODUCTION OF A TRACHEAL TUBE THROUGH THE MOUTH FOR THE ADMINISTRATION OF CHLOROFORM.

J. B——, aged forty-five, was admitted on July 31, 1880, suffering from epithelioma of the posterior portion of the tongue on the right side, and also of the right pillar of the fauces, extending to the epiglottis. Eleven weeks previous to admission the patient's attention was drawn to the tumor. For several years he had been in the habit of indulging excessively in alcohol. His heart was enlarged and slow and feeble in action. He had slight chronic bronchitis. His mind was somewhat obtuse.

On August 3rd a tube was inserted through the mouth into the trachea, through which chloroform was administered. The upper portion of the epiglottis was occluded round the tube to prevent the entrance of blood. An incision was made through the right cheek from the angle of the mouth to that of the lower jaw, the latter being sawn through and held aside. The right half of the tongue, with the exception of a quarter of an inch from the tip, was removed, as well as the implicated portion of the fauces. The bleeding was arrested, the angle of the jaw drilled and secured by a couple of wire sutures, the soft parts being brought together, the patient was roused from the chloroform, and the tube was withdrawn from the trachea.

On August 10th the wound was looked at for the first time, and found healed, with the exception of the aperture through which the wires from the jaw protruded. The wires were removed, the one on August 31st, the other on September 5th. A slight swelling remained on the right side of the face.

Remarks.—The insertion of the tube into the trachea was easily effected; it was followed by a little spasmodic cough; the inspirations were perfectly carried on through it. The administration of the chloroform through the tube, the extremity of which projected several inches beyond the mouth was continuous during the whole operation, without any way interfering with the operator. This is the fourth patient on whom these tubes have been passed through the mouth into the trachea.—*Pac. Rec. of Med. and Pharmacy.*

THE ORGANIZATION OF FOREIGN BODIES WITHIN ANIMAL TISSUES.

It is well known that many animal substances, such as catgut, decalcified bone, and even sponge, may, under favorable circumstances, undergo organization when enclosed within living tissues. And however great may have been our astonishment when the possibility of such a change was first demonstrated, we now regard it as a very natural process, since it is but the conversion of one animal tissue into another, and the revivification of a substance containing the germs of life within its cells. But, however familiar we have become with this power of assimilation of animal substances which is inherent in the living tissues, we should hardly have been ready to admit a little while ago that vegetable substances could in like manner become organized and incorporated into our tissues without having first been disintegrated and worked up in the laboratory of the chylopoetic system. Yet some recent experiments, and in particular one made recently by Professor C. Vanlair, of Liège, would seem to prove beyond doubt that such a change may take place.

In an article in the *Revue de Chirurgie* for August, 1886, M. Vanlair writes that he was making some experiments in the tubo-suture of nerves, using for this purpose rubber drainage-tubes, as he had found decalcified bone to become too speedily absorbed. In one of these experiments he employed a tube of ordinary gray vulcanized caoutchouc, having a diameter of one-fifth of an inch and measuring an inch and a fourth in length. The walls of the tube were three-fiftieths of an inch thick.

The experiment was partially successful as regards the regeneration of the nerves, but the point of greater interest was the metamorphosis which the rubber tube had undergone. It had been in position seven months and a half, and had apparently undergone partial absorption; for its upper end was nearly intact, but it became gradually thinner until it finally disappeared. On microscopical examination it was seen that the substance of the caoutchouc had lost its amorphous appearance and had acquired a complicated structure. Two different systems were to be distinguished: First, a more or less homogeneous parenchyma, and, secondly, a very large number of blood-vessels.

The stroma, forming a compact, resisting mass, was divided into fine connective-tissue fibres, united irregularly into bundles —wavy, crossing each other in every direction, and receiving a bright rose-colored stain in boracic carmine—and into cells occupying the inter-fascicular spaces. These cells were of an average diameter of twenty micro-millimetres, and some were polygonal with blunt angles, while others were slightly elongated though not fusiform. They had large nuclei, ten micro-millimetres in diameter, enclosing one or more large nucleoli. Sometimes the cells were more or less kidney-shaped, but there was no appearance of segmentation. The cellular elements were distributed irregularly between the fibrous bundles.

The vessels were very numerous, and belonged to the type of capillaries. In some the walls were formed of a continuous layer of elements, for the most part flattened and resembling normal vascular endothelium. In others there was a simple and regular cellular layer resting upon a fine membrane formed by fibrilli similar to those of the parenchyma, and containing within their meshes a number of cells identical with those of the parietal layer. In a third type the cellular lining of the vessel was formed of several layers of irregularly placed epithelioidal cells, nearly filling the lumen of the capillary. Finally, there was a rudimentary form, presenting on section a fibro-cellular ring, the interior of which was traversed by delicate trabeculæ containing in their interstices a few epithelioidal cells. None of these vascular membranes presented any traces of muscular fibres, nor were the walls formed of any distinct tunics.

The outer surface of the tube was very irregular and presented a fungous appearance, while the inner surface was smooth and showed no distinct line of demarcation from the subjacent tissues. At its lower part the tube had become assimilated to the surrounding connective tissue, and had finally disappeared. But this was not a resorption analogous to that of drainage-tubes remaining long in suppurating tissues, but was rather a true organization of the substance of the caoutchouc.

That india rubber can thus become organized is the more remarkable when we consider that it is a pure vegetable exudation, devoid of all structure, and seemingly more calculated to act as a foreign body and to prevent the union of wounded surfaces than to undergo organization and to become thus an integral part of the animal tissues.—Ed. *Medical Record.*

THE FORMATION OF NEW TISSUE FROM ASEPTIC BLOOD-CLOTS.

That blood-coagula will organize and form new tissue after a destructive operative procedure, is a new phase in wound treatment presented by Schede at the last Congress of German Surgeons. Accustomed as we have been to regard blood-clots as foreign bodies to be carefully removed from a wound, this statement is somewhat startling; but, after reading Schede's carefully-observed results, and remembering that hæmatoma of large size not infrequently disappear, and that it has long been known that blood-clots in an aseptic wound are innocuous, we feel somewhat prepared to accept Schede's remarkable statement.

His reported results are almost marvelous; the blood fills the wound cavity completely, clots, and is gradually replaced by permanent tissue formation without further wound secretion. By this method, resections of large joints have healed by primary union, large portions of the articular ends of bone, with the whole of the cartilage surface, have been removed without impairment of the articular function.

Two hundred and forty-one operations are recorded by Schede, and nearly all of these have healed under one dressing by primary union; among the operations performed are the removal of large sequestra from bone, the erasion of fungous granulations from the sheaths of tendons, the division of all of the soft parts, including the astragalo scaphoid ligament (Phelp's operation), and many excisions of joints and removals of tumors.

Especially adapted to this method of treatment are wounds of bones, joints and cavities having stiff walls; it is not advisable in wounds of the soft parts. To secure these results, one must completely remove all diseased (tubercular) tissues and all foreign bodies (sequestra or fragments of bone) from the wound, which must be aseptic, accurately filled with blood from parenchymatous bleeding, and provision should be made for the escape of an excess of blood by overflow drainage openings, situated at the highest point of the wound surface; finally, one must, as far as possible, favor the evaporation and drying of the excess of blood by the dressing. Of course, to obtain such results, one must follow carefully the plan laid down by Schede for operative procedure. This we will give somewhat in detail; for example, a limb is exsanguinated by an Esmarch's bandage, the knee joint is resected, visible arterial lumina are secured, the turniquet is loosened and spurting points are ligated, and the cavity of the wound is allowed to fill with blood. Then all tissues from the periosteum to the skin are carefully approximated. No drainage tube is used. The wound is covered with silk protective, which must lie perfectly smooth, and this is covered with a sublimate gauze dressing, interposed with layers of cotton batting, which is secured in place by rollers of antiseptic gauze; a splint is applied to the back of the leg, extending from a foot-piece to the waist, and this is finally secured in position by plaster of Paris bandages. Schede has resected forty large joints, with thirty-seven typical recoveries; and he has never been obliged to change this dressing from leaking of blood or wound secretion. Bone cavities, however, are treated in a little different manner, in that the skin and soft parts are caught together, with approprite intervals for the escape of an excess of blood. Over the blood-filled cavity is accurately adjusted a piece of silk protective one or two centimetres larger than the wound; this serves a double purpose, in that it secures the accurate filling of the wound with blood and prevents evaporation and drying of the blood-clot, within the cavity of the wound. The silk protective is covered with the dressing as applied to the knee joint. If any doubt exists regarding the ascepticism of the wound Schede advises packing it with iodoform or sublimate gauze until it can be made so, then when good granulation tissue appears he scrapes out the wound and allows it to fill with blood, which he covers in with protective as above and considers that he materially hastens the healing of the wound.

Schede considers the failures which have followed his treatment to be due: First to the incomplete filling of the wound with blood; this can be avoided by loosening the Esmarch before applying the dressing. Second, to the recurrence of tuberculosis in the wounds from incomplete removal of diseased tissue, for instance, in severe cases of general tuberculosis the coagula will not organize. Third, the failure to remove all foreign bodies from the wound, sequestra, etc., which may cause fistula in the cicatrix. Fourth, there is occasionally a fungous degeneration of the cicatrix as in wounds otherwise treated.

We are certainly indebted to Schede for boldly acting on his conviction that blood-clots will organize and form new tissue, and his eminently satisfactory results should attact the attention of all practical surgeons.—*Boston Medical and Surgical Journal.*

DENTISTRY AND THE STATE.

The art of dentistry is as old as civilization; it was cultivated by the ancient Egyptians and the Greeks and Romans, with whom the attainment of perfect bodily health was elevated almost into a religion, must have possessed operators of no mean skill. In our modern western civilization the art has reached an extraordinary state of perfection, and those members of the upper and middle classes who have not benefitted from conservative dentistry must form a small minority. However blind and deaf he may be to the seductions of the fine arts, *l'homme moyen sensuel* is fully alive to the advantages to be derived from the art of dentistry. The conviction is, however, generally borne in upon him in early adult life, when much mischief is already wrought; while the working classes as a body do not seem to be as yet penetrated with any just appreciation of the value of sound teeth. It is rare to find adults belonging to the upper and middle classes who have not been compelled on one or more occasions to call in the assistance of the conservative dentist; it is, perhaps, still more uncommon in the working classes and in the poorer strata of society, to find adults who have not lost teeth or stand in need of the services of a dentist. The fact seems to be that these classes as a rule entirely neglect their teeth, and never resort to a dentist except for some palliative treatment for an aching molar, which after a little temporizing with sedatives or escharotics, is finally extracted.

To the great mass of working men and women conservative dentistry is unknown, and for them the dentist is a man who pulls out teeth. True, there are hospitals here and there which will stop teeth, but their means are so small that they make no appreciable impression on the general mass; true, also, there are dentists who charge humble fees, but it is to be feared that the cases which reach them are too often desperate, and the modes of treatment adopted commonly of a temporary character.

In a paper read before the British Dental Association at its meeting in London in August last, Dr. George Cunningham of Cambridge gave the result of his examination of a hundred recruits who presented themselves in London for service in the army; he fully confirmed the general impression gathered from hospital practice, for he found that only four out of this number had a truly perfect denture, that 70 per cent. were suffering from inflamed and ulcerated gums, and 27 per cent. from chronic abscess. On an average each man had either lost or would have been the better for losing, more than three teeth, and had four others which needed stopping. A certain small proportion of recruits were even rejected for this cause; the total number thus rejected at this station in the eleven years ending in 1885 was 480, or over seven per mile; this would appear to be a fair average, for the total number rejected in 1884 at all stations, was nearly eight per mile.

It will, therefore, be safe to assume that among men of the classes from whom recruits are drawn, fully 90 per cent. would be better for treatment by a dentist. Leaving aside for a moment the question as it affects the general population, it is worth while to inquire whether in the public services anything has been done to check the ravages of dental disease, which it has been shown are even at this early stage of adult life so serious and widespread. It is to be feared that the answer must be an unqualified negative; so long ago as 1857 Dr. A. Smith, then Director-General of the Army Medical Department, drew attention to the question in a circular addressed to the officers of the department, and expressed the opinion "that a considerable gain to the Service, besides comfort to individuals would accrue from a more improved practice in dental surgery than that which has hitherto obtained in military life." The department, moreover, has given evidence of the importance which it, theoretically, attaches to the conservative treatment of the soldier's teeth, by providing a case of tooth stopping and scaling instruments; unfortunately the contents of this case are, in the opinion of practical dentists, so badly selected as to be useless; moreover, even if the instruments were well chosen, the number of cases is absurdly small; there are nine such cases for England and Wales, one for Scotland, one for the Channel Islands and three for Ireland. If a medical officer wanted to use the case he would have to send a requisition to the headquarters of his district, and he would then obtain it on loan;

as, however, the medical officers have no training in dentistry, and as the instruments and materials are so badly adapted for their purpose that even a trained and skillful dentist would be unable to do good work with them, the cases are not often in requisition, and it is a notorious fact that the only treatment the soldier can hope for is the extraction of an aching tooth; if there are exceptions they are few in number, and, so to say, accidental, they do not affect the general truth of the statement.

In the navy the state of affairs is much the same, conservative dentistry is practically unknown, and extraction is the only treatment. There is this important difference, however, that in the medical examination for admission particular attention is directed to the condition of the teeth, and the requirements are much more stringent than for the Army. As a set-off to this, however, it must be added that the age for admission to the Navy is from 15 to 16½ years, and that dental caries occur with the greatest frequency between 20 and 30.

It cannot but be that the State loses by this neglect of remedial treatment; the direct effect of carious teeth, the pain, and the consequent loss of sleep and appetite, must often incapacitate men from the efficient discharge of their duties, while the remoter effects, the impaired digestion and consequent general failure of nutrition, must leave them open to the assaults of disease, especially of the digestive organs. Though this loss to the State, through the ill health of its servants, may often appear small and inappreciable in the individnal, in the aggregate it must be very considerable; the existence of such a source of detriment are, indeed, clearly admitted by the precautions, inadequate as they are, which are directed to prevent the admission into the Army and Navy of young men whose teeth are in a very bad state. Although no doubt can exist that the State does thus suffer loss, yet the degree is exceedingly difficult to prove by statistics. Dr. Cunningham, in the paper above referred to, endeavored to establish the point by comparing the statistics of diseases of the digestive system in the Army and Navy. There is considerable difference in the admission into hospital, in invaliding and in deaths from these diseases, and it is markedly in favor of the Navy, where the examination of the teeth on recruitment is as above mentioned, much more stringent than in the Army. So far as it goes, therefore, this comparison of the two services is in favor of the contentation that the neglect of dentistry is the cause of a considerable amount of incapacitating disease, but where so many contributory circumstances exist it would be unsafe to attach much importance to the statistics.

The question therefore arises, and sooner or later will have to be discussed upon its merits without prejudice, whether it would not be worth while, upon purely utilitarian grounds, for the State to take more trouble to preserve the teeth of our soldiers and sailors. No practical person would dream of suggesting that every medical officer in the Army and Navy should be required to become a skillful dentist, but there is a mean between absolute ignorance and the skill of a specialist; practical dentists believe that any qualified surgeon might with a very moderate expenditure of time, learn enough about dentistry to be able to decide what teeth were worth stopping, and how to introduce a temporary filling to keep the tooth from further deterioration for some time. Dr. Cunningham further has the temerity to suggest that in each military district a member of the Army Medical staff be appointed to act as dentist, and provided with the necessary equipment; such an officer would of course hold in addition to the ordinary medical and surgical qualifications, a license to practice dentistry, and difficult cases requiring careful treatment could be referred to him.

It seems hardly less Utopian to suggest that on first entering the Army the teeth of recruits should be put into a good state of repair; their time is not then very valuable and they cannot always be practicing the goose step or learning to pipeclay their belts; a few hours spent with the dentist during the period of probation might save much future pain and illness and contribute to future usefulness as trained soldiers.—*British Medical Journal.*

Editor's Specials.

"Write the Vision and make it plain."

PROFESSIONAL POLITENESS.

WILL the reader notice carefully the article, on the above subject in this number? True, it was not written expressly for dentists, but for physicians; yet we are reminded of the familiar statement, so often made in popular almanacs in the happy days of our childhood: "Calculated for Cincinnati, but will, with slight variation, answer for any place in the west." This will do for any profession.

This article is for physicians, but we trust that the dental reader will find but little difficulty in transforming it so that it will guide the manners of the dentist as well as those of the physician.

If politeness is important in the practice of medicine, it is more so in dentistry. Ordinarily the physician is not long in the society of the patient; and bad manners would not be so likely to crop out or manifest themselves, till the novelty of the visit is somewhat worn off. The patient must often remain with the dentist hour after hour, and the patience of both is severely tested, tempting sorely in the direction of ill manners, perhaps on the part of both.

Again, the physician meets the patient when ill, and hence not so likely to notice slight deviations from the paths of politeness; but the dentist's patient is in full possession of the natural faculties, the powers of observation being even sharpened by the state of the nervous system, aroused through dread of the operation, if not dread of the bill to be settled at the conclusion of the complex catastrophe.

Besides, the physician meets his patrons usually at their quiet homes, content and happy excepting the disquiet resulting from the occasion of his visit. Their suspicions are not aroused, and hence they are taking for granted they will meet with politeness and civility. The dentists patient has been somewhat unnerved by making up the mind, getting ready, and coming to call on the dentist. The observing faculties are thus aroused to watchfulness; and one usually sees, in reality or imagination, that for which he is looking.

And once more, the family physician is usually regarded as a special friend of the family, and often, indeed, as a part of the family circle. Thoughts of him suggests relief from suffering, soothing comfort, ease from pain, etc.; while the dentist is an outside barbarian, of whom no one thinks without also thinking also of toothache and extraction.

The patient may be a timid young school girl. Needing the physician's attention, she receives it shielded by the common sense and loving arms of her mother, while protected still further by her more experienced sisters, to say nothing of the muscular energy of her big, burly brother, or the broad-toed, big boot of her father. But she must have the attention of the dentist. Ordinarily she must fix a date to the hour and minute, and though this seems to be a period beyond the boundary line of eternity, yet it comes on the lightning express, if not by telegraph, and is all too soon on hand, to consummate the dreaded tortures that have wasted the body and distracted the mind every minute since making the engagement. The dread hour for the dire operation has arrived, and, solitary and alone, the little victim must meet the lion in his lair, the tiger in his thicket, the bear in his den — — — or, let us hope ; and may God grant it, let us have her met by the kind hearted, clean, tidy, kind, polite gentleman, who at once, by his urbane manners, and conversation, makes her feel as if safe in the society of her own brother Joe, who never thinks of his own, but always of her happiness. For politeness, after all, is simply "kindness kindly expressed," bearing in mind, always, however, that it may be expressed by acts and looks, as well, if not better than by words.

All this time we are trying to suggest that if a dentist wishes to establish himself in a good paying practice, even if actuated by no better or higher motive, he has a louder call for politeness than has the physician. Had more of our contributors taken up and handled the subject, this scratch would not have been needed as an appendix to the article of Dr. Rouse. But our writing this need deter no one, for the subject is by no means, exhausted. Write out your thoughts and let us have them. It is quite probable that a want of affability has many times been a cause of failure, where the natural talents and acquired attainments were otherwise all that were needed for success.

CONGENITAL MALFORMATIONS.

These are almost infinite in variety. It would seem that sometimes credulity must become over credulous to believe the reports of such cases. Had a writer undertaken to draw on his imagination to make up a case that his comrades would decline to believe, he would not likely have succeeded in strangeness the one reported in this number of the Journal, which is so minutely described by Dr. Rouse. Teeth on the *tip of a tip* of a double nose would seem to be more ornamental than useful. We have slight hopes of getting the teeth for inspection, if not preservation. The parents are a class of society usually superstitious; but as this was their eleventh child, the absence of novelty is in our favor. Dr. R. has promised to secure them for us if possible to do so. Their history is remarkable. Their strange location, early appearance, rapid growth, early shedding—all go to make up an item strange in histology and physiology. Dr. R. is somewhat of a wit, if not a wag, yet a genial, good fellow, well read. a good practitioner, and as solid as his namesake, the hero of "Rouse's version." Having met a brother practitioner next day after the birth of the monstrosity he quietly remarked "Satan was born last night. I officiated." We suppose the cloven foot suggested the idea.

An autopsy would have proved highly interesting. The teeth found in mal-position suggest the question of other teeth, or other germs. Were any present? And if so, where? And of what character? And in what stage of development? And how many? And if not all present, what ones were lacking?

It is unfortunate for science, and for humanity that there is so much prejudice against *post mortem* investigations. In no case can there be harm to the dead, and there need be no shock to the feelings of the living; while it is true that lives may be saved, and made more secure by the knowledge thus gained.

OPERATIVE—A BORE.

The following paragraph is now in the papers, to be followed, possibly, by the story of *Grimes's Gimlet*, of which we are able to give a specimen—*from* the advance sheets—yes, quite a distance *from* them:

"Grimes had a gimlet, all his own—
He bought it at the store;
Whenever holes were wanted, Grimes
Was ready for a bore..
He bored a hole through muley's horn,
And in it put a string,
Then led her to the rivers's brink,
And plunged the heifer in."

"New York, October 12.—A novel operation was shown and explained on Saturday to a company of fifty dentists and others interested in dental and medical surgery. Two subjects, one a colored man, were also present to demonstate to the satisfaction of the incredulous dentists present the success of this method. A hole is bored in the bone under the gum where it is desired that the new tooth shall take root, and in this the tooth is put and fastened with ligatures. The ligatures in the case of one of the patients were removed in the presence of the dentists, and the tooth, which had been put in on Tuesday, was found to have taken firm root."

Books and Pamphlets.

THE AMERICAN SYSTEM OF DENTISTRY.—In treatises by various authors. Edited by Wilbur F. Litch, M.D., D.D.S., Professor of Prosthetic Dentistry, Therapeutics, and Materia Medica in the Pennsylvania College of Dental Surgery. Vol. I.—Regional and Comparative Dental Anatomy, Dental Histology, and Dental Pathology, 537 illustrations and 6 plates, 1034 pages. Philadelphia: Lea Brothers & Co.

This work, which we understand, is to be completed in three volumes, and sold by subscription, promises to be the most thorough and complete of any yet published. The contents are as follows: — Part I. Regional Anatomy, by M. H. Cryer, M.D., D.D.S. Lymphatic Vessels of the Head and Neck, by Albert P. Brubaker, A.M., M.D., D.D.S.

Part III. Embryology and Dental Histology, by W. Xavier Sudduth, M.D., D.D.S.

Part IV. General and Dental Pathology. General Pathology; Dental Caries; Pathology of the Dental Pulp; Diseases of the Peridental Membrane; Abrasion and Erosion of the Teeth; by G. V. Black, M.D., D.D.S., and Diseases of the Dental Pulp and their Treatment by James Truman, D.D.S. From the above our readers can judge of the scope of the work, and the names of the authors are a guarantee of its merits. The publishers have done their part handsomely in the letter press and the illustrations. We do not see how any dentist—progressive or otherwise—can do without the American System of Dentistry, which may aid him to decide whether we are a "profession," the "class of specialists called dentists," or?

INDEX TO THE PERIODICAL LITERATURE OF DENTAL SCIENCE AND ART, as presented in the English Language. Brought down to January 1st, 1886. By J. Taft, M.D., D.D.S. Philadelphia, P. Blakiston, Son & Co.

"This work, while making no pretensions to perfection, presents to the student and practitioner a reference to the principal papers which have appeared in dental periodical literature in the English language, on every subject pertaining to the profession. It has not been the intention to catalogue every paper, but it is believed that few, if any, really valuable ones have been omitted. Much valuable matter has appeared in the German and French Journals, only a part of which has been translated and finds a place in this work; of the remainder it is hoped a full list will appear in another edition. We hope at some future time to add a profitable list of reported cases."—*Preface.*

We have often had inquiries for a work of this kind, also for assistance in finding what had been written on a certain subject. Now, with Prof. Taft's Index, The Index to the Cosmos, and Dental Bibliography "the students and readers of our profession" may "ascertain where and by whom any given subject has been considered."

DENTAL SCIENCE: QUESTIONS AND ANSWERS: A Compendium of Lectures on Dental Materia Medica, Dental Physiology, Dental Pathology and Therapeutics, by LYMAN C. INGERSOLL, A.M., D.D.S., Dean of the Dental Department of the State University of Iowa.

This volume of 136 printed pages and as many more blank ones, forms a ready reference book for the student or the busy practitioner. It is the fruit of Dr. Ingersoll's 30 years' experience at the operating chair and will be found sound teaching. "The purpose has been simply to bring conspicuously into notice the fundamental principles which underlie the practice of dentistry." Our readers may obtain the book by addressing the author at Keokuk, Iowa. Price, in cloth, $2. Send for a copy.

A PRACTICAL TREATISE ON MECHANICAL DENTISTRY.—By JOSEPH RICHARDSON, M.D., D.D.S., Emeritus Professor of Prosthetic Dentistry in the Indiana Dental College; formerly Professor of Mechanical Dentistry and Metallurgy in the Ohio College of Dental Surgery, etc. Fourth edition, Rewritten and Enlarged. 710 pages, 458 illustrations. One volume. Octavo. Cloth, $4.50; Leather, $5.50. Philadelphia; P. Blakiston, Son & Co.

Of course everybody is acquainted with Richardson's Mechanical Dentistry, and will want this edition for use in the laboratory. We cannot better describe the changes made than by the following extract from the author's preface:—

"Noting carefully the imperfections that revealed themselves on a studious and painstaking review of former editions, the necessity of a revision of the whole body of the original text became apparent, and though this involved extended research and much labor, neither have been spared in the effort to render the present revised edition as faithful an exponent as possible of the best thought of the profession concerning the subject matter of which it treats. In the work of expurgation and amendment the author has been materially aided by the friendly, impartial, and judicious criticisms to which former editions have been subjected.

"It would be impracticable to particularize the emendations and supplemental matters incorporated in this edition, since they permeate almost the entire body of the original matter contributed by the author, and can only be appreciated or estimated by a comparison of the present with previous editions. Some modifications in the arrangement and treatment of subjects have been introduced, as well as some later processes which have not heretofore been considered."

This new edition contains two hundred and sixty-seven pages more than the last, and two hundred and seventy-three more illustrations. This does not, however, represent the full number of new illustrations, as many of the old ones were replaced by improved engravings. The whole number of new ones probably exceeds three hundred and fifty.

Our Aftermath.

Solder for Aluminum.—Col. Wm. Frishmuth, of Philadelphia, Pa. The following recipes to solder aluminum have been tried by me and found practical. For a solder with the common solder iron, take either 95 parts of tin, 5 parts of bismuth; or 97 parts of tin and 3 parts of bismuth; or 98 parts of tin and 2 parts of bismuth; also 99 parts of tin and 1 part of bismuth; the fuse to use in all cases is either paraffine, stearine, vaseline, balsam copaiba, benzine. Articles so soldered must be cleaned well before soldering, and the parts to be soldered must be heated just enough to make solder adhere to the parts to be soldered.—*Sci. Am.*

Eulyptol.—Schmeltz combines six parts of salicylic acid with one part each of carbolic acid and essence of eucalytus. He believes a real combination takes place, as tests reveal no carbolic acid in the resulting substance, which he calls eulyptol. At first he employed it for surgical antisepsis, remarking as one of its advantages that it did not form in the wound insoluble albuminates, as other antiseptics with a metallic base, which destroy their antiseptic actions.—*Bul. gén. de Thérap.* (*The Analectic.*)

Very Inquisitive.—Small boy (*fond of asking questions*): "Kate, if Turk likes bones so well, why don't he forget and eat his teeth sometimes?"

PHOSPHOR-NECROSIS.—One of the largest match factories in the United States is in Akron, and consequently the opportunity of observing this disease is quite frequent. He described the process of match-making in detail. About one-seventieth grain of phosphorus is contained in each match-head. In the dipping- and packing-rooms is where the danger of phosphor-necrosis is greatest. Here they are handled more, and in damp weather fumes are given off. The effects of phosphorus are local. In my ten cases all started from unsound teeth. Gums kept from the teeth by tartar is also a cause. It is generally thought that the patient must have been exposed for a long time to the fumes of the phosphorus. Essayist knew one girl who was exposed only two years. The physician rarely sees it in the initial stage. Generally the patient comes a few days after having a painful carious tooth extracted. He wishes to know why he still has pain.

Treatment: Tincture of myrrh is good. Deep incisions have not been so successful in the essayist's hands. He is a firm believer in the early operation. Prevention: First, allow none to work in the dipping and packing department who have not sound teeth; second, good ventilation; third, operators not allowed to eat dinner in their work-rooms, and compelled to keep their hands clean; fourth, keep a solution of the alkaline carbonates near as a mouth-wash.—W. C. JACOBS, M.D., in *Medical Record.*

KAVA AS A LOCAL ANÆSTHETIC.—Lewin (*Deutsche Medicinal Zeitung,*) reports the results of additional personal experiments with this new narcotic, the anæsthetic properties of which are singularly like those of cocaine. He found that six or seven minims of a solution of kava, injected beneath the skin, produced complete loss of sensibility in the surrounding area, which did not pass off for five days. The anæsthesia was so extreme that even strong induced currents failed to produce more than a slight prickling sensation. When a small quantity of the resin was placed on the tip of the tongue the bitterest drug could not be tasted.—*N. Y. Med. Journal.*

A MISNOMER.—"'Pears to me," said old Uncle Pete, as he leaned his hoe against the corn-crib and abstracted a pebble from his shoe, "'pears to me like dar war some kin' o' misdecomposishun in all dis talk about babies cuttin' teef. De way I'se cum to look at it, hit's de teef cuttin' de baby. Leas'-wise dat's de way hit looks in de case ob culled chilen."—*Cin. Med. & Dent. Journal.*

DEATH FROM BROMIDE OF ETHYL.—This anæsthetic, administered to an unknown woman, by the assistant in a Brooklyn dental office October 5th, caused the death of the patient. The assistant is under arrest.

TEETH INSERTED GRATIS.—"A farmer in Kent advises strangers, if they wish to get teeth inserted gratis, to go and steal fruit where his watchdog is on guard."—*British Journal Dental Science.*

OUR NOMENCLATURE.—One of the most absurd terms in use, constant at that, is, "artificial plate." Who ever heard of a natural one?—*Exchange.*

Myrtol.—Myrtol has only been hitherto studied as a curiosity. Dr. Linarix, in his doctoral thesis "De l'Emploi du Myrtol." gives a complete account of the properties of this substance. Myrtol is both an antiseptic and a disinfecting agent. By its presence it prevents the decomposition of fermentative and putrescible organic substances; applied to the skin, it does not produce the slightest irritation, if the epithelium be intact. If there be a slight abrasion, a few drops will produce a very trifling burning sensation, which quickly goes off. Myrtol stimulates the digestive faculties; all who use it find their appetite increased. In small doses it acts as a sedative. It is eliminated by the lungs and kidneys, and has also a powerful balsamic action, but is more easily tolerated than most balsams. Its use is not followed by dyspepsia, nor by any of the other troubles attending the use of balsams in general. Dr. Linarix says that myrtol does not produce the same result at all periods of the affections of the respiratory system. In subacute and chronic catarrhal affections, it should be administered when fever has subsided; then the sputa becomes less abundant, also less purulent. Six capsules daily each containing fifteen centigrams of myrtol, form a moderate dose, which should be taken before meals.—*British Medical Journal.*

Herbst's Matrices.—His matrices for each case as the circumstances required, were made at the moment they were wanted, and in a very simple and expeditious manner. German silver, about 31 plate gauge, was cut the required width, placed about the tooth and the two ends clasped with a pair of pliers made for the purpose, and pressed closely together by closing the beaks, causing the band to be drawn tightly around the tooth, and compressing the ends so that by easily removing the entire matrix now formed he at once touched them with a muriatic acid solution, which was at hand, and the union was made by the heat of a table lamp, associated with tin solder; and the matrix is ready for use; the whole operation occupying not over five minutes including the cutting from the plate and placing the matrix in position for use.—*Archives of Dentistry.*

A MEMORY.

BY HELEN CHASE.

I can feel his eyes upon me,
  Though my glance is turned away
To the rich and glowing colors
  Of the fast-departing day ;—
I can feel his touch upon me,
  And I thrill with conscious pain,
While from my eyes are dropping
  Tears, like wayward April rain ;
Lips and brow and cheek he presses—
  Torture exquisite! In sooth,
'Tis my dentist—filling, filling
  A much-worn bicuspid tooth!

—*Boston Courier.*

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. VI. DECEMBER 1, 1886. No. 12.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

A CASE IN PRACTICE.

BY GEORGE W. KEELY, D.D.S., OXFORD, OHIO.

NO INTELLIGENT operator disputes as to the injurious consequences of the premature extraction of the temporary cuspids, for in such cases it causes the earlier eruption of the first permanent bicuspid, which comes forward and appropriates a part, or the whole space normally due the permanent cuspid, and are often seen standing squarely in contact with the lateral incisors. While it is of the utmost importance to preserve all the temporary teeth until their mission is accomplished, the *premature loss* of the *cuspids* and *molars* are the most prolific cause of a crowded and irregular condition of the permanent teeth.

In the article published in the January number of this journal on the evil effects of the premature extraction of the temporary molars, we take the liberty of reproducing the cut, (improved,) as also another to more fully illustrate this *important* and interesting subject. From this cut it can be seen the left inferior second bicuspid and permanent first molar are in contact, and the second bicuspid is being crowded wholly outside the arch; this

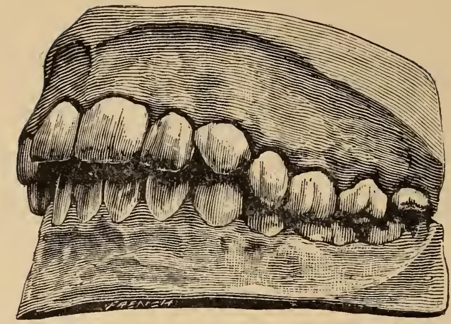

Fig. 1.

condition also appears on the other side being caused by the premature extraction of the temporary molars. It can also be seen that the permanent second molars (inferior) are fully erupted, caused by the first molar coming forward and taking up the space due the second bicuspid, thus giving the second molar ample room to erupt, while in the upper jaw the temporary molars are still in place, and the permanent second molars are just appearing. The patient was then eleven years old, she is now twelve. Three months ago on examining the case, we found all the eight permanent molars occluding perfectly, and the supesuperior second bicuspids fully erupted. The inferior second bicuspids seemed to be making a desperate effort to occupy their normal position, and had forced a perceptible space between the first bicuspids and molars. Their perseverance and pluck won our sympathy, and we commenced giving them aid and comfort by a system of occasional wedging between the first bicuspids and molars, first with a piece of wedge wood, and subsequently with compressed pine. The improvement already accomplished can be seen by the following cut, from a cast, taken November 1st.

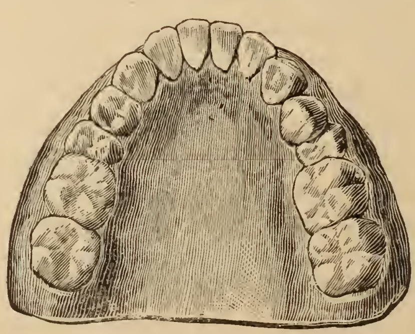

Fig. 2.

This cut flatters the second bicuspids, for they are not quite as fully developed as shown. As the permanent molars occluded perfectly, the wedging had the tendency to force the eight anterior teeth forward, as none of them antagonized to prevent; it has already made an improvement in her enunciation and personal appearance. She is now wearing a vulcanite plate to expand the anterior teeth, to give the delayed bicuspids ample space to assume their normal position, and bring all the teeth into line.

In a future number of the Journal we shall present additional illustrations on this subject, showing the great importance of preserving the temporary molars, until after the permanent first molars are fully erupted and in contact.

OHIO STATE DENTAL SOCIETY.

TOLEDO, OCTOBER 26, 27, 28, 1886.

PAPERS AND DISCUSSIONS.

[Reported expressly for the Journal.]

WHAT SHOULD BE THE TREATMENT IN CASES OF IMPACTED THIRD MOLARS?

This subject was carried over from the last annual meeting, Chillicothe, at which Dr. Butler read a paper on the subject. It was printed on page 3 of the Journal, present volume, January, 1886.

Dr. C. R. Butler, Cleveland: With the great number of forceps that have been constructed, there is still great want of adaptation to the inferior teeth. I have been on the lookout for years—had some made by Chevalier, and some by Sherwood, and two pairs by the celebrated Evrard, of London. From their small bulk they are well adapted for reaching the superior teeth. Have removed these teeth, on the lower side, by cutting or excavating with the engine, rather than sacrifice a good second molar. I find the engine a most valuable adjunct in dividing roots for extracting. A crown may be quickly divided with a disk and sharp fissure bur. General anesthesia is not favorable for such operations as the removal of the third molars.

Dr. G. W. Keely, Oxford: Such cases usually come to us after the surrounding tissues are so sore that it is impossible to do anything, even make an examination, without great pain to the patient. Often hard to decide what to do.

The older the patient when the third molar is erupted the greater the trouble. If the second molar is badly decayed when the third molar is erupted, no difference what the age of the patient, I extract the decayed second molar and the third will occupy the place of the second.

We sometimes spend considerable time and thought on a case of this kind and, as I did in the following one, receive only abuse for our pay. The patient—a man 28 years old. Been suffering several weeks until the inflammation had spread along the jaw, involving several of the teeth, none decayed. No room for the eruption of the third molar. I advised extraction (I use an elevator-shaped instrument, and always attack that kind of a case with a good deal of timidity.) Told him it would hurt like the "Old Nick"—the very devil—and he went away offended. Lay in bed about six weeks. Physician lanced his face six times. Dentist in another city removed the second molar and then blunderingly removed the third too. He said no one on earth could remove the third first.

Another case—a school girl. With scissors cut out V shaped piece of gum half-inch, covering posterior part of crown and running to the angle of the jaw. Next time cut piece out next to cheek and relieved her. It is a terrible thing, to me, to sacrifice a molar that might be saved. In extracting can usually tell by feel the direction the roots curve.

[Dr. Butler exhibited some third molar teeth; one with four roots—three well developed and one rudimentary. Dr. Harrison exhibited one with roots greatly curved. First attempted to extract with forceps and failed, then used an elevator with success, turning the tooth out in the direction of the curve of the roots.]

Dr. J. F. Siddall, Oberlin: I hope I have more trouble with such cases and see more of them, than any one else. We have fifteen hundred students in our town and cases present themselves every day. I had made a Physicks' forceps and although always afraid of it, have never had any trouble from its use.

Dr. C. H. Harroun, Toledo: There are cases, where the third molar is partly covered by the second, which require the extraction of the second molar to give relief. If we would make use of the engine in extracting, we would be more successful. With suitable fissure-burs and trephines, separate the fangs, then remove enough of the process around the roots to allow the instrument to take hold. In case of a third molar broken off below the gum, use the engine to cut away and get down sufficiently to allow an examination to be made before attempting to extract.

Dr. C. R. Butler: We should study to have well adapted forceps—the best possible. These have little novelty, [exhibiting forceps for superior third molars] except that they are less bulky than most instruments. There is danger of fracturing the process of upper jaw in using bayonet shaped forceps. Have a third molar myself that I would give ten dollars to have it out. It has been tried by some of our best operators and not budged. Never heard of the use of the engine except by Dr. Harroun. I would caution against removing the second to get at the third molar, where the third could be got out with a little more time and care.

Dr. J. Taft, Cincinnati: I approve of Dr. Harroun's method with the engine. Its utility is apparent on the mere mention of it. The use of the fissure drill and the trephine opens up a new phase in extracting and I can hardly wait until I get home to try it.

Our Uncle here [Uncle Jere Robinson] says the roots of the inferior third molar nearly always curve back, which facilitates its removal by the elevator or the Physicks'. There is danger of injury to the posterior portion of the enamel of the second molar, which can be avoided by placing something between the tooth and the instrument.

Sometimes the inferior third molar is deeply bedded and partly covered by heavy bone lying posterior to it. Bur around and free it of bone. Chiseling has been suggested, but it is a tedious and uncertain process, requiring skill that few possess. We should study, whenever opportunity affords, as a guide to extraction, peculiar forms, position and relation to other teeth. The superior third molar differs from the inferior third molar very much. Sometimes we find blunt roots; sometimes three, four and even five roots, short and stubby, standing out at right angles. By such study we can learn to know, before extraction, the shape and position of the roots, etc.

Dr. J. A. Robinson, Jackson, Mich.: In extracting the inferior third molars, it is sometimes well to use the forceps to unlock the tooth, then a slight rotary motion will remove them.

Dr. Geo. W. Keely related a case where the anterior grinding surface of the inferior third molar pressed against or under the posterior portion of the second molar, with a disk we cut down through the anterior portion of the third molar, thus freeing it from the second molar.

Dr. W. R. Lilly, Circleville: Thirty years ago I was troubled by a wisdom tooth in my own mouth. A man tried to extract it—worked until he was tired out and then he had to go to church. It remained twenty years, when my son took it out and with it the second molar.

Dr. J. Taft: Wholly impacted third molars may cause serious disease involving other teeth, loosening second and first molars—abscesses apparently from these latter teeth originating at the third molar, that being a favorable place for pus formation. If you take crania and study the subject with a view to a proper decision and method of procedure in these cases, you will be surprised at the number of impacted third molars, covered may be with heavy bone. This is a phase of the subject calling for special attention.

Dr. J. R. Callahan, Hillsboro: When in California a man came into the office with his face bandaged. Asked him what was the trouble. He showed the sore on his face with bone protruding from it. The dentist in whose office I was, told him it was a tooth. The man went away because eminent surgeons who had treated him told him it was the angle of the jaw, etc. He had paid them about $3,000. He came back and the tooth was extracted, effecting a cure. The dentist charged him $300, which he refused to pay, but the courts decided that he must pay it.

Dr. L. D. Potterf, Defiance: My inferior third molars are impacted; they are wholly covered by the gums. No room for them to erupt. Gums often swollen and sore, also left tonsil, although physician said the latter was not caused by the tooth. I think it was. Get relief by cutting an X shape down over the teeth with lance.

Dr. C. H. Harroun: Think the inflammation is caused by the upper teeth pinching the gum.

Dr. J. Taft: Have seen a number of cases where the irritation by these teeth caused tonsilitis and pharyngitis. Removal of the teeth relieved the parts involved. Physicians and surgeons make gross mistakes in these minor matters, as they consider them. They say it is the business of the dentist to attend to them. Make it your business then. Study Heath on Diseases of the Jaws, and such works as that of Mason and other surgeons.

Dr. C. R. Taft, Cincinnati: I use the chisel with success in removing third molars. With the mallet drive it down around the tooth. If the tooth does not loosen easily drive the chisel harder, but not too much.

Dr. J. R. Bell, Cleveland: A domestic employed in the family of one of my patients, suffered with an encysted inferior third molar. She suffered with severe neuralgia. Is an epileptic. Sometimes three or four attacks a week, disturbing the whole family. Although I removed the tooth quickly, it caused excruciating pain, but came away easily, much to my surprise. She had a fit eight or ten days after the removal of the tooth. Since then only once a month, sometimes skipping a month.

Dr. H. A. Smith, Cincinnati: Dr. Bell referred to severe neuralgic pains. When ossification is complete and there is severe neuralgia, if these teeth have not appeared we should take that fact into consideration. I think the fissure drill better than the forceps. If there is difficulty in introducing the drill, take a gum-lancet and spring the alveola away sufficiently. Often we can cut through and separate roots with the engine disks, making easy the introduction of a chisel or a fissure drill. We too often hurt and mutilate our patients outrageously with the forceps, when we might be more successful and gain the gratitude and good will of our patients by using the engine, etc.

Dr. F. H. Rehwinkel: I have received, addressed to this society in my care, a pamphlet from Dr. Younger of San Francisco, on his method of implanting teeth. Do you desire that it be read?

[After considerable discussion, which brought out the fact that the paper was a reprint of a report made to the California State Dental Association in July, it was decided to have it read by Dr. Metcalf of Kalamazoo, Michigan, and that our readers may understand the discussion we reprint the report.]

IMPLANTATION OF TEETH AND PERICEMENTAL LIFE.

BY WILLIAM J. YOUNGER, M.D., SAN FRANCISCO, CALIFORNIA.

Transplantation and Implantation, as I call my new operation, has so far realized my most sanguine expectations, and leads me to the belief that in a short while it will become as firmly established in professional practice as any other operation requiring skill and judgment.

Since the publication of my brochure on "Transplantation of Teeth into Natural and Artificial Sockets," which you have all seen, and a portion of which formed a report made to this Association, at its last session, I have made a discovery in regard to the vitality of the pericementum, that is even more startling than the success of the operation of Implantation itself. In the pamphlet I recommended the use of cock's combs as a means of preserving the vitality of the peridental membrane, and also mentioned that in two instances the life of this membrane had been preserved for over fifty hours, in tepid water. I now, however, have to report a case—one of several—which proves that these means are not at all necessary to preserve the vitality of this, the most wonderful tissue in the human body; that this vitality of the pericementum is marvelous; and that it may be as tenacious as that inherent in the seeds of plants.

In the early part of March, 1886, Mrs. Dr. H. G. Blankman—the wife of one of the pioneer dentists of this coast—brought me a bicuspid that had been extracted at her solicitation, in Sacramento, on the 31st day of January, 1885, in the belief that it was the seat of a neuralgic pain, which had been the cause of great anguish to her. This tooth, brought to me after this long lapse of time, had in the meanwhile been carried about in her porte-monnaie, stowed away in her jewel case and shuffled about in a bureau drawer. And this tooth she wanted replanted in her jaw! My first impulse was to laugh, my next to argue with her about the impossibility of success of such an operation, explaining to her that it was due only to the vitality of the membrane covering of the root that the operation owed its success; that, without this living membrane, the tooth was as impossible of attachment as so much bare ivory or porcelain; and that while I had succeeded in keeping this membrane alive for over two days, it was by constant immersion in warm water, at a blood temperature; but that the pericementum of this tooth was, as she herself could see, as dry and shriveled as parchment, and as devoid of life.

Just as I had persuaded her of the impossibility of success, there flashed through my mind a passage in John Bell's work on the "Anatomy and Physiology of the Human Body," that I had lately read, which awoke the suggestion that success in implanting that tooth was, after all, possible.

This eminent surgeon, in criticising an article of the famous John Hunter, says: "How can such vitality exist independently of a circulation? But there are not wanting examples of an obscure and low degree of life existing in animals' ova, or seeds, for seasons without a circulation; and if for seasons, why not for a term of life?"

While this passage did not bear directly on the subject in question, it somehow awoke a train of thought that led me to the conclusion, that in that dry, shriveled membrane there possibly lay lurking a dormant life, which under favorable conditions would rouse its energies and make the tooth enclosed once more a living, useful organ.

I had proved that the peridental membrane possesses a wonderful tenacity of life, in at least two instances, where, after it had been removed from all life-giving connection for fifty-two hours, it was as vigorous in forming attachments as though it had been planted immediately after removal. I therefore reasoned with myself, if this peridental membrane preserves a vitality unimpaired for fifty-two hours, why not for so many weeks or months? So I said: "Mrs. Blankman, the idea has just occurred to me that what you want done is, perhaps, possible." And I explained the cause of this revolution of opinion, as she is not only a brave but a very intelligent woman; and continuing, said; "I will perform this operation as an experiment, to test the vitality of the pericementum; for, though I have no positive expectation, I have a hope for its success." So, on the 11th of last March, in the presence of and with the assistance of Dr. Alexander Warner, who was acquainted with all the circumstances of the case, I drilled a socket between the first left superior bicuspid and first molar; and after soaking the tooth in water—temperature 120° Fah.—for twenty-five minutes, to soften the membrane, restored to the jaw that which it had been deprived of just thirteen months and eleven days before.

As the dental aspect of the tooth was perfect, and the approximal not nearly so much so, I turned the tooth, thereby much improving the original appearance of that portion of the mouth. When the operation was finished, the tooth was found so firmly fixed in the socket that retaining ligatures were not applied; and union took place as rapidly and as thoroughly as if it had been a fresh tooth.

The tooth retaining this firmness, and no swelling nor pain ensuing, the lady commenced eating with it, and at the end of twelve days became so careless in her use of the tooth, that she bit a hard crust of French bread with it. This was too much; the tooth received a wrench that loosened it and caused the gum to bleed profusely. Next morning she hurried to the office, and with tears in her eyes, narrated the accident. I found the tooth quite loose, but not dropping, and the gum on the palatine surface swollen, and with the evidence of having bled at the margin.

In my heart I was glad the accident had happened; for to me it was a test of the question whether the retention of the tooth was due simply to the nice adaptation of the walls of the socket to the root of the tooth, and therefore only mechanical, or whether it was really due to awakened life in the peridental membrane, and consequent vital connection with the living environment of gum and alveolar substance.

If mechanical, I argued, the irritation that has been set up around it, especially in its present loose condition, will cause its expulsion; but if vital, it will be retained and become firm again. I therefore did not seek to retain it in place by any ligature, but simply painted the gum with tincture of iodine, and cautioned her not to chew on that side until I gave her permission. In one week all marks of the accident had passed away; the tooth became again firmly fixed, and remains to the present moment as solid as a rock. I have tried, since then, to pass a delicate instrument, the point of which had been flattened for the purpose, between the gum and the tooth; but the act gave as much pain, and the instrument met with as much resistance, as in the tissues surrounding the teeth that had never been disturbed in their sockets; all of which clearly proves that the pericementum of that tooth—dry and shriveled as it was—had during those long months of absence from any life-supporting substance, tossed about from place to place, from pocket and purse to casket and drawer, preserved a vitality as fresh and vigorous as when it was removed from the place in which it grew.

I am happy to say that Mrs. Blankman has kindly consented, in the interest of science, to present herself to you this afternoon, in order that you may examine this tooth, and satisfy yourselves by personal and thorough examination, as to the success of the operation. And I want each and every one of you gentlemen to test in every way that your ingenuity may suggest—short of extraction—the statement I have made, that vital connection has been established between that tooth and the walls of the socket, as perfect as that of the other teeth that have grown there and never been tampered with.

I have since tried implanting teeth which have been extracted for weeks and months, with equal success, proving the wonderful tenacity of life in the peridental membrane.

The question now in my mind is: "When does the pericementum die?"

In consequence of these experiments, and the equal success of the implantation of long extracted teeth with that of fresh ones, I have discarded, as unnecessary, the warm water and the comb of the troublesome cock.

I now simply lay the teeth aside in a clean, cool, dry place, and prepare and use them as I want them.

I have also discarded the flat drill, and use, instead, graded trephines for piercing the bone and for doing the major part of the work; finishing the walls, as formerly, with burs of various shapes.

Much doubt has been expressed by the profession in the East and elsewhere as to the stability of implanted teeth, because the kindred operations of Replantation and Transplantation that have come under their observation, and which, at first, gave promise of permanency, have so generally turned out failures in one or two years, from absorption of the roots. They argue that if Replantation, which is the putting back of a tooth into the socket from which it has been but just drawn; and Transplantation, which is the planting of a stranger tooth into a socket from which its own has been but freshly extracted; if, they say, these cognate operations, where the conditions seem so much more favorable, in consequence of the sockets being natural, are so generally failures, what better result can be expected from an operation where the socket is formed by violence to the jaw?

Now, if they would but consider the conditions and circumstances under which these different operations are undertaken, they would readily see that the premises upon which they ground their assumption are unsound and deceitful. For instance, in replantation, as this operation is usually performed, the parts—that is, the peridental membrane, the apex of the root and the alveolar process immediately surrounding these—are highly inflamed, in a state of disease, with pus either already formed or forming at the end of the root, and the operation is undertaken with the view of relieving or aborting an alveolar abscess. A portion of the diseased apex is then cut off, and the tooth is forced back into the cavity. Here we have a diseased root thrust back into a diseased socket. The disease is not removed, its conditions are simply modified; and while the congestion may subside, and the tooth become comparatively comfortable, the disintegration of the root substance—already begun—is likely to continue, and in the course of time the entire root becomes destroyed, or, what is called absorbed; and the bodiless crown drops off. So much for Replantation.

Again, in Transplantation there is a healty tooth, but it is usually made to take the place of a miserable, old, diseased root, that has been growling and festering in a diseased socket for years, to the discomfort of its unfortunate possessor. The diseased root is pulled out, but is the disease in the surrounding alveolus extracted with it? On the contrary, enough is usually left in its tissue to make war upon the new occupant, and either cause its expulsion, or eat away its substance. You must remember, that while the old root remained, there was sufficient vent through its decayed or broken structure to permit the gases of decomposition and the pus to escape, and thus prevent active trouble. But when the new tooth is put in, the vent is entirely occluded, and if there be sufficient disease in the alveolus, the retained gases and pus effect the expulsion or the painful elongation of the intruder. If not enough disease is left to do this, then the slow process of erosion is apt to ensue, and the root becomes, in time, absorbed.

Now, in *Implantation we have a healthy root in a healthy* *socket;* and, therefore, the factors that tend to the destruction of the root in Replantation and Transplantation are not present, and, therefore, not operative in Implantation.

As to the seeming violence to the bony structure of the jaw, I will state that there is no substance in the human body that seems so tolerant of abuse as this same alveolar process. And my experience is, that union takes place more readily and kindly, and the teeth become much sooner firm and serviceable in Implantation than in either of the other operations.

I trust, my brother practitioners, that what I have read to you will serve to dispel whatever gloomy forebodings you may also have entertained, in considering the future of Implantation, and that you will apply yourselves at once to master this operation, for the benefit of your patients and of yourselves. Also, I urge on you the practice of Replantation and Transplantation, for they can be made uniformly successful, if you but follow the system I have made you acquainted with, and the primal rule of which is, to allow no disease to remain in socket or in root. Do not wait half a lifetime, as the pessimists in the profession would have you do, in order to find out if the operation is going to be successful, but commence now.

In this paper I have summarized these operations as performed by our Eastern brethren, in order to make their argument as effective as possible, and so to impress upon you the reason of the failure of Replantation and Transplantation, as practiced by them, and to demonstrate that to the disease left in the socket and root, or in the socket alone, must be attributed the failures caused by absorption of the root; otherwise, why should the result of my experience in these operations be so different from theirs? In all my practice of these kindred operations—and it has probably far exceeded that of any other practitioner in the United States—I have had but one case of non-success, due to the absorption of the root. As it has a lesson in point, I will narrate it.

In this case, the tooth inserted was but poorly covered with pericementum, and the socket had been diseased for eighteen years, and was, moreover, so much larger than the root that the tooth had to be held in by ligatures. The evening after its insertion, the ligature loosened and the tooth fell out and dropped on the carpet. The gentleman placed it immediately back in the socket, and being unable either to tie it or find me, retained it in position by closing his jaw and keeping his teeth tightly pressed together by means of a handkerchief passed under his chin and tied over his head. At nine o'clock the next morning I found that attachment had already taken place, which assured me that it had not been fatally injured by the episode of the night previous. I therefore renewed the ligatures, and when the gentleman started for his English home, two months later, the tooth was well attached, though not firm. This operation was performed March 2d, 1885; and a letter, dated more than a year later, informed me that the crown had broken off, and he was puzzled to know why it should have done so, when he was not cracking nuts with it! He also wrote that the fangs remained imbedded; but in this he must be mistaken. It is, in my mind, a case of absorption of the roots.

It is the only case where I did not either cut out the disease nor treat it sufficiently long to satisfy myself that it was all gone from the socket; and it is the only tooth I have lost by absorption. I may say that in cases like this, where the size of the socket is in excess of the diameter of the root, either from natural causes or alveolar disease, I form an artificial root of gum shellac, of the shape and a trifle smaller than the body of the root to be inserted; to which I attach an artificial crown. This is inserted into the socket in the direction the new tooth is to occupy, and there given temporary lodgment; by which means the margins of the gums and alveolus are kept from retracting, the socket made healthy, and the granulations allowed to fill the cavity, until there shall be perfect contact with the whole surface of the new tooth, which I then put in.

DISCUSSION.

Dr. C. H. Harroun: I have myself witnessed some of these operations and would not be surprised at anything done by Dr. Younger, who is a very accomplished surgeon, cultivated and well read. California has many rich people who willingly pay any price to have their teeth preserved. They have the ability to pay and Dr. Younger has the nerve and ability to undertake and carry out experiments of this kind.

Dr. J. Taft: Our first impression is one of incredulity—we wonder how a man could write a paper of that kind. There was his first paper on the subject and now this with additional operations, many of them witnessed by prominent members of the profession, some of them unfriendly to Dr. Younger. I cannot but think he has done as he states, and if he has, what then? Think of the future and what may come next.

Dr. H. A. Smith: The failures in replantation and transplantation are probably often due to the fact that the diseased tissues are not cured of their disease before planting the tooth. We might get better results by drilling out the socket and inserting a different tooth instead of the one removed. It is contrary to all our ideas of physiology that a tooth which has been removed a long time should revive—like the seed that has been entombed with the mummies for thousands of years. We can have no assurance in these cases that the membrane is intact or has not been injured or removed by accident. Can we say that there is life or union between the alveoli or peridental membrane? It may be that the roots are being absorbed slowly—it may take fifteen or twenty years. It is too soon to say whether it is a success or not.

Dr. Harroun: Dr. Younger says that he always removes the pulp in transplanting or replanting. Its presence was the cause of many failures.

Dr. H. A. Smith: It is remarkable the amount of interference the alveolar process will stand without resenting. We can often anticipate nature in absorption, in correcting cases of irregularity of the teeth, by burring out the process in the direction you want to move the teeth.

Dr. Geo. W. Keely: My own experience has not been very flattering. Have seen teeth which the patients told me physicians had extracted by mistake and then replaced them. That physicians make such mistakes even in their own mouths reminds me of one who got me out early one morning and wanted me to extract that tooth—a lower molar. On examination found no decay, but another was badly decayed. Made application to destroy the pulp; told him to come in and let me save the tooth. Didn't see him again for ten years when he came in to have extracted the roots of that tooth.

Dr. B. R. Taber, Bowling Green: Related a case of replantation eleven years ago and doing good service.

Dr. W. P. Hall, Martin's Ferry: A superior central incisor transplanted in 1881, dropped out a few weeks ago. The root was entirely absorbed.

ALVEOLAR ABSCESS WITH LIVE PULPS.

Dr. J. W. Lyder, Akron: Have a problem that I want solved and can't solve myself. Dr. Jennings when at Ravenna, examined a tooth of mine (superior central incisor) with an alveolar abscess. He diagnosed a dead pulp, but on cutting into it found a live one. Have since had the same experience with my right superior lateral.

Dr. A. Stephan, Cleveland: Have had a similar experience in my own mouth.

Dr. D. R. Jennings, Cleveland: The abscess in Dr. Lyder's case opened through the gum half way up the root. The abscess was well developed. It was a surprise party to me. The margin of the gum was healthy.

Dr. H. A. Smith, Cincinnati: Was the tooth a carious one?

Dr. J. W. Lyder: It had a small gold filling in it.

Dr. Smith: Might not the impression made by the irritant effects of the filling, have manifested itself at any point on the root? Might it not be that the nerve was not alive, but that the sensation was carried to the living matter beyond the canal?

Dr. Henry Barnes, Cleveland: In Dr. Stephan's case the abscess was half way up the root. Tested with ice and hot air, and it gave every evidence of having a live pulp.

THE HERBST METHOD OF FILLING TEETH.

Dr. F. H. Rehwinkel, of Chillicothe, demonstrated the Herbst method by filling a proximal cavity in a superior right bicuspid, for Dr. Potterf, of Defiance. Dr. R. showed Herbst's method of making matrices of thin german silver drawn around the tooth closely by dull cutting-pliers, removed while still held by the pliers and soldered with bismuth solder, then replaced upon the tooth. If a better adaptation is wanted at the cervical margin, a wedge is driven against it.

Dr. Rehwinkel said: The methods of Herbst are new, the principle is not. Among those who have accomplished the same thing by other methods is Dr. A. A. Blount of Springfield, our own state. He uses smooth-pointed pluggers and steady manual pressure. All of us, even the most skillful and successful, have had occasion to be mortified with our occasional failures at the cervical margins. For a time these failures were attributed to faulty manipulation. Then we had Dr. Flagg and his new departure theory. It set investigation on foot again. Now comes Herbst and stirs up the matter. Occasionally we meet with old fillings, put in twenty or more years ago by hand pressure, and we are glad to see them, they look like old friends, and no fault can be found with them. Another method was to line the cavity with soft gold and finish with cohesive gold. Herbst, when in New York, said that dentistry in Germany was in a deplorable condition, depending almost entirely on American methods. He chafed under it and as a result has worked out this system until he has it almost, if not entirely, perfect. He doesn't advise anyone to abandon his own methods and take up the new ones—this after seeing the methods of the best American operators. He thinks that his system, combined with the mallet, will best suit the majority of practitioners. Bödecker relies on the mallet for finishing a filling and so do I. At present Wolrab prepares the gold for this system of filling better than any other manufacturer. Another necessity is the matrix, which he makes at the time of the operation—with great quickness and simplicity—requiring but a few minutes of time. He has plenty of such little tricks which he gives freely to the profession. You have all heard of lining rubber plates with gold, for which the manufacturers charge two prices. Well, he takes a sheet of gold foil—no matter what number—then a little liquid rubber, puts the flask together and it is done. In filling proximal cavities in the lower incisors difficult of access, he uses a thin steel matrix bent back out of the way and fills with narrow strips of gold, making the operation very simple.

Dr. T. W. Brophy, of Chicago, demonstrated the use of his matrix in filling with gold. The matrix consists of a thin band of steel, perforated for the admission of a small set-screw which impinges against the side of the tooth; tightening the screw draws the matrix snugly against the cervical margin instead of against the crown. The flexibility of the thin steel allows the gold to be forced over and against the edges of the cavity by wedge-shaped pluggers. The fillings (in posterior and anterior proximating cavities in the inferior right first and second bicuspids) demonstrated either the superiority of the matrix or the superior skill of the operator over the difficulties usually accompanying clinics.

A CRITICISM OF THE HERBST METHOD OF FILLING TEETH.

BY DR. W. W. ALLPORT, CHICAGO, ILL.

[Read before the Ohio State Dental Society, Toledo, October, 1886.]

It will be remembered that when Dr. Herbst's method of filling teeth was brought before the American Dental Association a little over two years ago, I then stated, that while not doubting that gold could, under certain conditions, be well packed into a cavity in a tooth by it, I was of the opinion that the objections to the system were so many and important that its general adoption in practice was neither practicable nor desirable. The opinion expressed was not received with much favor at the time, nor is it certain that many agree with me now.

Thinking it possible that there might be good reasons for changing this opinion in regard to the matter, I was glad when it was announced that Dr. Herbst was coming to this country to demonstrate his method, and subsequently, that arrangements had been made for his presence at the late meeting of the American Dental Association that we might see him operate and learn from him directly, his reasons for, and the particular advantages of his method.

The acquaintance I made with Dr. Herbst was certainly a most agreeable one. For him, personally, I have the kindest feelings, while for his genius I have a great admiration; and my respect for his head and his heart is such, that I do not believe he would desire you or me to adopt his system of practice, or commend it to others, unless it had the approval of our judgment.

That gold can be well condensed by his system I have not a particle of doubt, nor have I ever had. Neither have I any doubt that most excellent fillings may be made with crystal or plastic gold, for I have put in hundreds and I may say thousands of them. To be frank in regard to this matter I will say, that much of the little, early reputation I may have gained as an operator, was acquired in the use of crystal gold, for during the first few years of my practice in Chicago I seldom filled a tooth without using more or less of it, this being before the introduction of cohesive foil. But because good operations have been made with it, and can be made with it, is not a sufficient reason for its general use in practice, for experience and observation have taught that quite as good operations can be made with less exactness in details and labor, than is required in the use of this preparation of gold.

With a full acknowledgment of the possibilities that may be attained with this form of gold, the exactness and labor required to reach the highest results in its use are so great, that it was long ago abandoned by a large majority of our best practitioners, though some still make quite extensive use of it, and all might possibly make a limited use of it to their advantage. Its general use, however, is neither practicable nor desirable, because quite as good results can be reached with foil, with much less time and labor.

I make this reference to the use of crystal gold for the purpose of illustrating and enforcing my ideas in regard to what is known as the Herbst method.

Without attempting to discuss or explain the physics involved in the impaction of gold by revolving pluggers (burnishers). Accepting the proposition as a demonstrated fact, I will, with your permission, state some of the objections which seem to me, must ever hold against its general adoption in practice.

The first I will mention is the great difficulty and sometimes impossibility of reaching all parts of a cavity with the straight and clumsy instruments, that must be used by this method,—cavities which could be readily reached, and the filling material properly packed with the variously shaped hand- or mallet-pressure instruments to be found in all well equipped operating cases. In many fissures or deep under-cuts that could readily be filled by the old method, a doubt must always be present in the mind of the operator as to whether by this new method such places are perfectly filled or not, for Dr. Herbst himself admits that the only way he can be certain in this matter, is to test the questionable places with small hand-plugger points. It requires no argument to show that a plugger which cannot be relied upon to make known a defective place in a filling, cannot with certainty be relied upon to make the filling good at that point, for an instrument which is too clumsy or ill adapted to find the defect with, is certainly not well adapted to properly fill it with, when found. If hand- or mallet-pluggers can be more safely relied upon to find and fill difficult accessible points about a filling, than can the Herbst method and pluggers, their superiority for filling the balance of the cavity, or for making simple fillings in easily accessible places can hardly be justified.

Second. To make this method available we are instructed to cut away so much of the sound and strong portions of the tissue as will make all portions of cavities accessible to these arbitrary and clumsy instruments. To this procedure I object and enter an uncompromising protest, for no one has the right to use an instrument or adopt a system of practice that makes it necessary to sacrifice sound, healthy tooth structure, that could be saved by the use of other materials, instruments or methods of practice.

In preparing a cavity to receive a filling, it is the duty of the dentist to remove all tooth structure that cannot be saved in a healthy and useful condition, but no more. He has the right to cut away as much of the sound structure of a tooth as may be necessary to secure a firm foundation and retention of his filling. But in doing this, it is his duty to see to it that the material used for his filling, is, of its kind, the most easily adapted to the intricacies of the cavity to be filled; also that instruments used in packing it are such as are the best calculated to reach all places in the cavity rendered difficult of access, by virtue of saving portions of the tooth, the removal of which would unnecessarily and forever mar its beauty and harmony. To remove more than this to suit his own convenience, or to enable him to use any particular materials or instruments in filling, might, without a very great stretch of imagination or injustice, be considered mal-practice, in a mild form, at least.

While these remarks are made with special reference to the unnecessary sacrifice of tooth substance, by adopting the Herbst method, I will say parenthetically, that they are not without quite too frequent application in regard to fillings put in with cohesive foil. Teeth that could be just as safely filled and much more of the tooth structure saved by a judicious and skillful use of non-cohesive combined with cohesive foil, are in part, mercilessly destroyed in order that the successful use of cohesive foil, exclusively, may be insured.

Admitting, therefore, that under certain circumstances, good fillings may be made by the Herbst method, but to do which, in other cases, would require the destruction of more tooth structure than would be necessary in making good fillings by other well known methods, I believe its general adoption in practice is neither desirable nor justifiable.

Third. As "time is often said to be the essence of a contract"—an important factor in the consideration—so too, the time consumed in the use of any particular tools, or instruments, in doing a given thing, when contrasted with the time consumed in producing just as good results with other materials and instruments, is an important factor in wisely choosing the instruments or materials to be used.

In making these remarks I am aware that the claim is made by some that much time can be saved by this method; this I do not believe to be true. The same claim was made for crystal gold when it was first introduced and later, for plastic gold when it came up for our approval. Good fillings, we were told, could with old burs, or most any kind of an instrument, be put in with it in from two to three minutes. In neither case, however, has experience proven the claim to have been well founded; on the contrary more time is consumed in putting in good filling with either of these materials than is required with foil. The same history is to repeat itself in regard to the Herbst method. No doubt fillings can be put in by this process very quickly, but the highest results from it will only be reached by it after much painstaking labor.

If, therefore, as I believe is the fact, under favorable circumstances more time is consumed in making good operations by the Herbst method than by those just mentioned, the method is neither practicable nor desirable in this practical and time-saving age, for time is money, not only to the dentist but also to the patient.

Personally I have had but little experience with these rotary pluggers, but I have seen Dr. Herbst and my friend Dr. Rehwinkel operate, and I have witnessed some of Dr. Marshall's experimental operations by this method, and I confidently assert that I have seen better fillings made by hand mallet, and the old fashioned hand pressure methods, and that too, in much less time than was consumed in making the fillings by the Herbst method. My observation has thus far led me to the belief that there is no saving of time or superiority of operation to be obtained by the new method over the old system. Therefore, as a matter of economy, or superiority of results, I see nothing to justify its general adoption.

Fourth. That quite as good or even better operations can be made under circumstances favorable for the Herbst method-by the use of suitable instruments and non-cohesive foil enameled with cohesive foil, under mallet pressure, and without the necessity of sacrificing so much sound tooth structure.

While the objections to this method as a general system of filling teeth, are so obvious that its adoption is not warranted, it is possible that as an adjunct to other methods of practice it may be made useful; in fact I believe it can be. From what I have seen I think it can be made useful at the cervical walls of cavities, especially when the matrix is used. The surface of the pluggers being smooth, and the impact made without violent concussion; when proper access can be had it should be advantageously used in packing gold against margins of cavities, preventing the fracturing of the enamel which so frequently occurs in the use of the mallet pluggers. No doubt it may be advantageously used in other places, but those mentioned are where its greatest excellence will be found. Could a wise judgment be exercised in determining when and where it could, or could not be used with benefit, I have no doubt that it might with advantage be occasionally employed. The fear, however, is that an over zealous advocacy of the system by its friends will lead many to use it when better results could be secured by the old methods. By its general adoption, or too frequent use, frequent failure would be the result, and the method brought into undeserved disrepute, with its abandonment, even while it could be used to advantage, thereby losing, in a measure, at least, the benefits that might follow from a judicious advocacy and use of it.

Now, Mr. President, having stated to you freely and frankly some of my objections to this method of practice, I trust that no one will think I have had the least intention of being unkind or harsh to any one, for nothing could be farther from my desire. I have only intended by words of truth and soberness, to make my views clear to you—to be approved, or disapproved, by argument, or the test of time, as truth may justify.

For Dr. Herbst I have a great admiration. He is more than a Yankee in invention—as generous as King Lear in giving; nor is he so conceited that he cannot learn from others; he freely gives and is wise enough to freely receive. As a profession we are under many obligations to him for the many useful inventions and "tricks," if you please, that he has left with us, and we shall gladly welcome his promised return to this country next year.

DISCUSSION.

Dr. F. H. Rehwinkel: Dr. Allport, in his paper, dwells particularly on the point that there is no time saved by the Herbst method. Those of us who saw him operate at the office of Dr. Bödecker, notwithstanding the fact of the continual interruptions owing to his language having to be translated, know that he brought his fillings to the polishing point, in ten to fifteen minutes, that would take Dr. Allport fifteen to twenty-five minutes, which certainly shows a saving of time in favor of the Herbst method. As to the sacrifice of tooth substance. I have seen Bödecker fill with as little loss as by any other method. Herbst's instruments are not all clumsy—he has as fine pointed ones as you could wish for, therefore it is not necessary to cut away good tooth substance to allow the use of clumsy instruments. Dr. Allport over estimates the loss. Herbst gets the full conformation of a cavity by the use of the matrix, before introducing the filling. We, ourselves are divided on this point. Some of us use chisel and bur, and cut away freely, and others just the reverse. Dr. Allport must have misunderstood Herbst, for he (H.) laid particular stress on saving tooth substance. He undertakes to fill teeth that I certainly should not attempt. One case in particular was a broken down bicuspid. When McKellops saw it with the matrix on he was amazed that Herbst attempted it, yet he filled it in three-quarters of an hour, and McKellops said he could not have done it with the mallet in less time than three hours. The principle is of great value and you do away with retaining pits; you can press the gold into any shape with less danger to the frail walls of a tooth than by any other method. Dr. Herbst will take a monogram cuff button, press gold into the monogram until he makes a reverse of the monogram and I have seen them worn as scarf pins.

As I have said, we do not expect to see other methods laid aside for this. In a critical case I would not rely on it. It requires practice and skill, but neither did you acquire your present methods without labor and failures. Another use for it which I have not mentioned, is in filling cavities in incisors with amalgam. He takes a large cylinder of Wolrab gold and presses it flat between his fingers, covering one side of it with copal-ether varnish, he lines the cavity by burnishing it in, using a ball of cotton between the burnisher and the gold, then fills with amalgam. Thus preventing the discoloration of the tooth. He varnishes the gold before introducing the amalgam, to protect it from the mercury.

Dr. J. Taft: Would vouch for what Rehwinkel says and perhaps swear to it, in the main. Was prejudiced against Herbst's method, but upon seeing him operate it was soon all removed. The very manner of the man, his want of reserve, giving everything freely, helped me to the change. The accounts given in print, leaves the impression that the whole of the operation, or the greater part of it, was accomplished with these engine burnishers, but that is not so. He uses sharp pointed instruments, in the hand, going carefully over the parts not easily accessible to the engine points, examining them and packing the gold into them by hand-pressure. It is not necessary to proceed as related by Dr. Rehwinkel, but I cannot see any objection to the varnishing. In cavities with walls that you would not want to sacrifice, his method of lining is all that could be desired. The gold is forced into and adapted to the walls, so that even the hairs and every little irregularity shows on the gold. With such perfect adaptation, the cavity is certainly sealed hermetically and you can then finish the filling as usual, by condensing the gold with the mallet. By this method you avoid comminuting or injuring frail borders. Sometimes a slip of the plugger and a blow from the mallet will check the enamel. Such accidents do not occur with this method. In many large cavities gold can be introduced more rapidly than by other methods. You ask, of what use is the ball of cotton? You can readily see that the cotton prevents the curling of the gold which is held by it while being forced into place. Some one of these points may be availed of by every one. We too often become wedded to our pet methods in spite of everything and hold on to them with the greatest of tenacity—like the darkey who was standing against a tree, when the lightning struck it, throwing him down. He backed up to the tree again saying, I *will* stand here!

Dr. J. R. Callahan: It has not been made plain to me what part the cotton plays. Is the cavity filled so full that the instrument can't move?

Dr. J. Taft: The cotton does not rotate with the instrument—it simply acts as a cushion between the gold and the instrument.

Dr. C. R. Butler: The projector of this method insists on having a continuous wall to the cavity, and if it is not continuous, then a matrix is introduced until it is. As to retaining points. Suppose, in case of a large filling, put in by the Herbst method, a portion of the wall of the cavity is fractured and broken away, as often happens in the best contour work ever made, what becomes of the whole mass? It has always been my belief that the gold should help sustain the tooth, so that if a portion of the tooth was broken away you could cut down into your filling, repair it and your filling be as good as before. Have your gold so built into the cavity that it will stay there in union with the tooth substance—that is a different thing and there will be no shuffling about. The fact that this gold can be burnished into an onyx monogram is nothing wonderful. The spinning of metals is a common thing among artisans. The carrying of a mass of gold into a cavity without retaining pits is questionable. Have tried it with the best of my ability for more than two years, and can make a passably good filling. My first efforts were in the grinding surfaces of molars with tin. The flexible matrix has the advantage of the unyielding one. that the gold can be packed against the borders with more certainty. I doubt if there is as much tooth substance sacrificed by the Herbst method as by the use of the electro-magnetic mallet and they are doing it to-day. The Herbst mode (using a german silver matrix) can be applied with less space than any other method.

Dr. T. W. Brophy, Chicago: I am greatly pleased with my first meeting with the gentlemen of the Ohio State Dental Society and fully appreciate the honor you have conferred by placing me on the list of honorary members. And I have learned something new and admirable from your method of procedure and form of government, by means of an Executive Board transacting all the business of the society in executive session, which gives you more time for scientific discussion. I hope you will pardon me for thus digressing, but it struck me as worthy of remark.

The use of soft gold and its re-instatement in operative dentistry, is of great good and it ought never to have been abandoned, for it is possible to make the fillings in large cavities more easily and quickly than by any other method. Soft gold may be made to remain without retaining pits or undercuts by holding one piece in position while another is being carried in and condensed. The making of retaining pits is the most painful of the whole operation and the thermal changes through that gold carried down so near the pulp, leads to more difficulty and after trouble. I would rather have the tooth subtance at the base of the cavity than cut it away to get a square base of gold.

The objection I had to the Herbst operations was to his matrix, and I will make it so clear that you will all see it. If your matrix is forced against the borders, you can't carry your filling over the margin of your cavity. If you drive a wedge against the Herbst matrix, at the cervical margin, you cannot get your gold over the edge of that margin unless you use a wedge shaped plugger. Now with the matrix I use, having carried the gold over the border of the cavity, you can tighten the matrix. If you have carried the soft gold between the matrix and the margin, you can't fail to have a perfect filling. You want the filling retained where the strain comes, at the masticating surface —not down at the border, where the retaining pits are usually placed. I make the retaining cuts at the masticating surface. Use equal parts tin and gold foil (folded together and made into ropes) carried up one-quarter way from the bottom, then soft gold half way and finish with No. 60 cohesive gold.

(To be continued.)

ANÆSTHESIA vs. ASPHYXIA.

BY DR. S. J. HAYES, PITTSBURGH.

It is to be very much regretted that the vast difference between anæsthesia and asphyxia has been almost entirely overlooked by writers on anæsthetics and artificial anæsthesia. And yet, not until we are prepared to conclude that anæsthesia is produced by the continuation of the *forces* and *functions* of life under modifications induced by medico-chemical agencies, and that asphyxia is the result of a suspension or abrogation of these forces and functions; also that oxygen is the only *life-giving principle*, then and not until then, can we fully recognize the *essential*, *fundamental* and *bed-rock* principle, that there can be no anæsthetic without a proper admixture of atmospheric air with a suitable narcotic (except it be locally applied), which must be necessarily and unchangeably true, as the atmosphere is the only element in the physical world that will sustain respiration and life, and therefore is *absolutely essential* to an anæsthetic.

Though the gases composing the pure atmosphere may be breathed in other relative proportions, or other gases such as carbonic acid (CO_2), carbonic oxide (CO), or nitrous oxide (NO) may be taken but for a very limited time, yet they do not support respiration and life, and consequently are not anæsthetics and are never taken without physical injury or positive danger to life. In fact they antagonize life from the very first inspiration. True they produce unconsciousness and insensibility, but by asphyxia, which is the legitimate result of depriving the blood of the life giving principle—oxygen—and thus the death of the patient is inevitable when the continuous use of the nitrous oxide or other gas, has so weakened the affinity of the blood for oxygen, that it fails to appropriate the oxygen from the air. The failure of these gases to sustain life is not attributable to a lack of oxygen in them, as they contain a greater quantity of oxygen than the atmosphere; but that the affinity of the oxygen for the other gas is greater or stronger than the affinity of the blood for the oxygen, and consequently the blood cannot appropriate the oxygen, and therefore the gas fails to support life.

And yet, a very common error entertained by many, both in the medical and dental professions, in that as nitrous oxide (NO) consists simply of the elements of common air only in different proportions that it certainly cannot do harm; and that since it has a larger proportion of the life-giving principle—oxygen—when inhaled, it should only make one live faster than when he breathes the air. But this shows gross ignorance of the laws of chemical affinity. It is blending a chemical combination with a mixture and drawing conclusions accordingly; certainly a most *absurd* and fatal mistake.

As pure oxygen would be too stimulating for respiration, we find it in the atmosphere diluted with nitrogen—an inert gas—

simply in a state of mixture, the nature of neither being essentially changed. In like manner, oxygen and hydrogen, when merely mixed, retain their gaseous forms and elemental properties, and while simply in a state of mixture, are exceedingly inflammable and explosive, but when these two gases are chemically combined, the result of that chemical union is water which is entirely antagonistic in its properties to either of its elements. Therefore, we recognize in this the universal law of chemistry, that "whenever two elements are united by chemical affinity the properties of both are changed, and the result is a third substance differing from either, and that the elements in such union cannot act in their individual capacities till a positive decomposition is effected." Therefore, it is perfectly absurd to suppose that the blood is appropriating oxygen, for the simple reason that we are inhaling something of which oxygen is a chemical constituent.

Take for further illustration these two gases, nitrogen and oxygen in their five different proportions chemically combined: nitrous oxide (NO), nitric oxide (NO_2), hypo-nitrous acid (NO_3), nitrous acid (NO_4), nitric acid (NO_5). Now bearing in mind distinctly the nature and properties of these elemental substances, or when they are only mixed as in the atmosphere, and note the wonderful changes wrought by these chemical combinations. While one proportion of nitrogen and and one of oxygen form the exhilarating protoxide of nitrogen or laughing-gas, two proportions of oxygen and one of nitrogen constitute nitric oxide gas, one inspiration of which would destroy life almost instantly. Five proportions of oxygen to one of nitrogen form nitric acid (aqua fortis) which cannot be tolerated a single moment by any part of the human system. Now if it were true that the more oxygen we combine with nitrogen, the more exhilarating and healthful is the result, then according to this logic, nitric oxide should be twice as exhilarating and healthful as nitrous oxide or laughing gas, and nitric acid (aqua fortis) five times. Therefore, the logic is *irresistible* and the *conclusion inevitable*, as we have demonstrated, that oxygen to be available for the support of respiration and life, must be *free* as in the atmosphere, and that any quantity of oxygen in chemical union with other elemental substances, can avail nothing in the support of life; and that as the pure atmospheric air is the only element on God's earth that will support respiration and life, and hence is *absolutely essential* to an *anæsthetic.* And since any other elements administered instead of the pure air, always endangers health and life; the use of nitrous oxide, (or laughing gas,) carbonic oxide and other gases, for the *pretended* purpose of producing anæsthesia, should be prohibited by law. That pure atmospheric air is nature's only element for respiration to sustain animal or vegetable life, has been repeatedly demonstrated.

As Dr. L. Turnbull, in his manual of anæsthetic agents, says, "Laterally it has been disproven, both by experiment and observation, *i. e.*, the theory which for a time prevailed in the United States, that nitrous oxide acts upon the blood as an oxigenating agent." No experimental proof has yet been furnished that nitrous oxide is decomposed in the blood, or forms chemical combinations with it. It enters into the blood as nitrous oxide and as such is eliminated.

As early as 1863, Dr. C. W. Foster, a dentist of high repute in Massachusetts, made a severe onslaught on the "high priests of this Moloch," in the following language: "When I say nitrous oxide is not an anæsthetic, *per se*, I mean strictly so." Nitrous oxide may be given pure and with the greatest caution, it does not affect the statement just made, the principle is the same." And then he adds: "That nitrous oxide supports combustion in the body, is seen in the remarkable exhilaration of oxidation at exhibitions, etc. That it cannot support respiration or life but a few moments, is seen in that *frightful gasping* of the patient growing deeper and faster as he dies for want of air. These are the symptoms that precede the stupor and insensibility of this *wondrous anæsthetic*."

Drs. Joylet and Blanch, in the *Archives de Physiologie*, of July, 1879, give as the result of their extensive experiments, that "the protoxide of nitrogen, chemically pure, is not able to sustain respiration in animals any more than in plants, the combustion (in which respiration consists) not being sufficiently energetic to decompose the nitrous oxide gas. Breathed pure by animals the protoxide of nitrogen is an asphyxiating gas which produces death with all the usual signs of asphyxia, by strangulation or by respiration of the inert gases (nitrogen and hydrogen) and in almost the same time. Breathed pure, if the nitrous oxide produces anæsthesia, it is by privation of oxygen from the blood, insensibility showing itself when the arterial blood commences to have only two or three per cent. of oxygen. The arterial blood is then very black and contains thirty or forty per cent. protoxide of nitrogen. Animals are able to live by breathing an atmosphere of protoxide of nitrogen and oxygen in the proportion of the gases in the air, the nitrous oxide replacing the nitrogen without producing troubles of insensibility. The arterial blood, then, contains thirty to thirty-five per cent. of protoxide of nitrogen. Birds plunged in a similar confined atmosphere, behave like those placed under a bell-jar of the same capacity containing air, and die after having nearly equally consumed the oxygen in the receiver and formed as much carbonic acid. The protoxide of nitrogen being an irrespirible gas, and possessing none of the anæsthetic properties that have been attributed to it, its employment can only be dangerous and should be under that title proscribed from medical practice."

Dr. H. Lyman, in his extensive and thorough work on "Artificial Anæsthesia and Anæsthetics," page 318, says that "Nitrous oxide does not enter into any chemical combination with the elements of the body, but is simply dissolved in the blood; hence its speedy entrance and departure from the organism." "Again, nitrous oxide is not decomposed in the blood, consequently it cannot replace oxygen or yield oxygen for the respiration of the tissues." A committee appointed by the British Medical Association, reported to the same effect in the *British Medical Journal* of January, 1879, to which we invite the reader's attention.

Many other eminent authorities might be quoted to the effect that nitrous oxide is as much of an asphyxiating agent as are the inert gases—nitrogen and hydrogen—and that it will produce asphyxia and death in about the same time. But we will conclude with the following "experiments with nitrous oxide and carbonic acid," as reported in the *Odontographic Journal*, vol. II. No. 4, January, 1882: "At a union meeting of two of the District Societies of western New York, held at Buffalo the latter part of October last, Dr. W. C. Barrett, assisted by Dr. A. P. Southwick, performed a number of experiments on small animals, using for that purpose nitrous oxide and carbonic acid. The apparatus consisted of a cylinder, a larger one for carbonic acid, and a covered glass receiver twelve to fifteen inches in diameter and twelve to fifteen inches in depth. Near the edge of the cover was a small opening through which, by means of rubber tubing, the gases were conveyed to the confined animals, and through which also their exhalations were permitted to escape into the room. The method followed in each experiment was to place the animal in the receiver, adjust the cover, pass the tubing through the opening above mentioned, and then turn on the gas, the time being taken at the moment of admission of the gas, and again when life was pronounced extinct.

“The following table gives the kind of animal experimented on, the gas used, the result of the experiment, and the time consumed:

1. Pigeon (common)	Carbonic acid,	Death,	1 minute, 20 seconds
2. “ “	Nitrous oxide,	“	1 “ 20 “
3. “ (tumbler)	Carbonic acid,	“	1 “ 10 to 25 “*
4. “ “	Nitrous oxide,	“	1 “ 30 “
5. Rabbit,	Carbonic acid,	†	1 “ 25 “
6. “	Nitrous oxide,	“	1 “ 40 “
7. Mouse,	“ “	“	1 “ 10 “

* Disagreement on the part of time-keepers.

† Pronounced dead in the time given, but subsequently restored to normal condition by means of artificial respiration.

Artificial respiration was resorted to in all cases except “7,” but without effect except in “5.”

Thus having proven both from the very *best* of authority and the logic of facts, in demonstration of the laws of chemical affinity, that oxygen—the life-giving principle—chemically united with any other elemental substance, cannot support life, that when taken in its pure state, it is too active and stimulating for respiration, and that when simply mixed with nitrogen as in the atmosphere, it will support respiration and life, we have *unequivocally established* the fundamental of the *bed-rock* principle, *that there can be no anæsthetic without a proper admixture of atmospheric air with a suitable narcotic.*

The definition some times given, that *anæsthesia* is the absence of sensation, is not *sufficiently explicit*, nor yet *is it true.* For in death there is an absence of sensation, and one who is dead cannot be said to be anæsthetized, for there is an absence of life as well as of sensation. Again, there is also, in that state or condition called *syncope*, an absence of sensation, but there is also an absence of the forces and functions of life brought about by an interruption of circulation. Nor yet can their condition be in any sense called anæsthesia, any more than asphyxia or death can be thus named. As we have already demonstrated *insensibility* and *unconsciousness* are the results of asphyxia as well as of anæsthesia. But that peculiar condition of the system, so much desired for surgical operations, is an *absence* of pain with the continuation of the forces and functions of life that we *properly name anæsthesia.* Hence no scientist should be so *stupid* as to confound anæsthesia with asphyxia, or as to make little or no distinction between them.

Anæsthesia is a perfectly safe condition for surgery, but asphyxia, syncope or coma are *positively dangerous* to life; in fact, that which is breathed in lieu of the atmosphere that produces asphyxia, *antagonizes* life from the first inspiration, while asphyxia itself is a *very near approach to death*; just *so near*, that when the patient has continued in that condition long enough, that the affinity of the blood for oxygen has so weakened that it fails to take up the oxygen from the atmosphere, the patient is *irrevocably* gone.

While it is true that narcotics may be administered in such a manner and in such large per centage as to induce a suspension of the vital forces, and thus produce asphyxia or syncope, yet, it is more than equally true that none of these dangerous results follow when a proper admixture of pure air with a suitable narcotic, diluted and attenuated in such a manner and such per centage as to meet the wants and condition of every patient in the various stages of anæsthesia, is administered by a competent person with suitable apparatus.

Correspondence.

"I charge you that this epistle be read."

THE LATE DR. F. P. ABBOT, OF BERLIN.

MY DEAR DR. WATT:—Will you kindly notice in the OHIO JOURNAL OF DENTAL SCIENCE, the death of Dr. F. P. Abbot, of of Berlin, the notice of which I enclose, as follows:

"At 9 o'clock this morning, DR. FRANCIS PEABODY ABBOT fell asleep in his Saviour.

Dresden, Oct. 11th, 1886. THE BEREAVED.

The burial services will be held in Dresden at the Trinitatis graveyard on Thursday, Oct. 14th, at 11 o'clock."

Dr. Abbot was a pioneer of American Dentistry in Europe, having practiced for more than thirty years in Berlin. I have never met any one who was so universally *loved* by his brother dentists, and indeed by all who knew him as was Dr. Abbot. He took a deep interest in American dentistry in Europe. He was one of the first to respond to the call for the establishment of the "American Dental Society of Europe," and was ever afterward an enthusiastic member. How the "boys" will miss him over there, when they meet each other at the annual gathering of the members! May a chair be placed for him at the banquets, for his kindly, though patiently suffering presence, must ever be before the old members of the Society. Dr. Jenkins, of Dresden, writes to me thus: "You know his patience in suffering, his sympathy for and devotion to others, his generous impulses, his pure and noble life. Thousands rise up and call him blessed. To those who knew him best, there can be no second friend; but Heaven had need of him!" Aside from any personal regard, every American dentist in Europe, and every dentist in America should be grateful to and honor the memory of Dr. Abbot, for he has made the name of American Dentist honorable, in Germany. No one has done more toward elevating the position of the profession of dentistry—both socially and as a scientific body—than has Dr. Abbot. As he had many friends in Ohio, and as many of your readers knew him personally or by reputation,—as his distinguished son-in-law Dr. Willoughby Miller is an Ohio of so good a man and for expressions of deep sympathy for the boy, it seems to me that the Ohio Journal of Dental Science should be a proper medium for expressions of sorrow for the loss for the bereaved family and friends.

Cincinnati, Nov. 8, 1886. C. M. Wright.

"STRANGE CASE—TEETH ASTRAY."

Editor Ohio Journal of Dental Science:—If your correspondent, who reports a case of congenital malformation under the above caption, will consult any standard work on surgery or anatomy, he will find that what he describes as a "second nose" is not an uncommon malformation in bad cases of hare-lip. Such cases are figured in nearly all works on surgery. Gross figures such a growth with two teeth erupted.

The growth is simply a misplaced intermaxillary bone, single or double, and may have accordingly either two or four teeth.

Very respectfully, J. F. Baldwin, M.D.

Columbus, O., Nov. 8, 1886.

EARLY ERUPTION OF THE THIRD MOLARS.

Editor Ohio Journal of Dental Science:—I would like to ask your readers is this a freak of nature or a common occurrence: Miss S—, eleven years of age, called at my office to have a second inferior molar extracted. On examination I found all the teeth fully erupted except the third superior molars which showed signs of eruption. The inferior third molars were fully erupted and well developed. The child showed no signs of development other than the precocious development of the teeth.

Canal Winchester, O. N. B. Sibley.

OUR CHICAGO LETTER.

At the meeting of the Chicago Dental Society, Thursday evening, Nov. 2, we listened to our venerable friend Dr. Allport analyze the prospectus of the wonderful dental journal that is to appear the 15th inst. As was expected by some of us, a motion was made and seconded to have a report of the proceedings of the society published in the *Dental Review*—considering the fact, that only a short time has elapsed, since the matter of publication of proceedings in dental journals was discussed, and it was almost unanimously voted not to publish them, it seemed a little absurd that the matter should be brought up again. Here the farce began—a regular "pic-nic."

Dr. Allport arose in his quiet way and said he would like to know something more about this journal that was to astound the dental world with its wisdom, than the prospectus had given us, before the proceedings of the society were given it for publication, he would like to know something about the editorship, whether it was to be edited by one man, or a "ring" or "clique," with one man as a mouth piece, for aught he knew the McChesney's or the Sovereign Bros. had it in hand, he wanted the authority for the statement in the prospectus that the proceedings of the

Chicago Dental Society would be published—had understood that the Chicago Dental Club had, for some reason, refused the *Review* the publication of its proceedings. He also noted another statement that had been made in the prospectus that there was a deplorable lack in the features of the editorial department of all the dental periodicals, he then mentioned the *Cosmos*, *Independent Practitioner*, *Archives*, *Register*, and The Ohio Journal, as having had from time to time as able editorials as any likely to appear in the *Dental Review*, said either the author of the prospectus was a very old man and knew a great deal, or a middle aged man with a great deal of vanity and egotism—he stoutly opposed the publication of the proceedings of the society in any journal whose editor or editors were unknown, or felt it necessary to keep their names a secret—no doubt self interest was at the bottom of it.

Finally the motion was amended by substitution and a committee was appointed to ascertain the names of the editors, stock holders, etc., etc., and report at the next meeting. So the profession will be deprived of much amusing reading matter in the first issue of the *Dental Review*, but doubtless you will be so overwhelmed by wisdom in the editorial department that you will at once advise Jonathan, George and James as well as W. C. B. to shelve their feeble efforts and make way for the great international journal, edited and published in the great city of Chicago, by the great unknown.

We will, from this time henceforth, hear no more of insomnia among the progressive dentists of Chicago. Midnight oil is known to the erudite, as a sovereign remedy for the restless mind, but sleepless nights will be experienced all the same. A little knowledge is a dangerous thing, and all danger must be avoided in an undertaking that is to enlighten the world—a "terrible" thinking must be kept up, as the world is large, and round and never stops for sleep. More anon.

Chicago, Nov. 9, 1886. D.D.S.

A very Broad Hint.—A physician in this city is said to have the following inscription on his bill-heads: "A patient's gratitude to his doctor is a part of his disease, and is most declared when the fever is highest, cools off during convalescence, and entirely disappears with the complete return of health. All bills due upon presentation. Office prescriptions and attendance strictly cash."—*N. Y. Medical Record.*

Compilations.

"Gather up the Fragments."

EARLY DENTISTRY.

Dr. Atkinson's personal observation of the evolution in methods and materials for filling teeth. Among them was the biting of slugs of lead into the cavities by his brother and an acquaintance, with improvements upon that of various vegetable gums, associated with plugs of wood driven into the cavities. He also spoke of the customary visit to his father's house of the presiding elder, who carried with him a set of scaling instruments for scaling their teeth, and who taught them how to keep them clean. Further on, in connection with his efforts to practice medicine, he described his crude beginning in dental practice, his learning of a so-called dentist, how to fit crowns and fill with tin and Crawcour's amalgam, from purchased formulas. His first instruments were copied from those of this dentist, and were made of shoe makers' awls, improved with socket handles made for him by a gunsmith. These were of two forms of points, flat and round, and some of them were cut on their faces with a file. Such files as could be found at the hardware store were used for trimming fillings. In this crude practice he received commendations for good results from many representative persons; and this fact, when now considered in review, seems more of a marvel to him than it did then. He has seen some of these operations surviving for forty years.—N. Y. letter in *Archives of Dentistry.*

From forty to fifty years ago, intinerant dentists used to go from house to house, and their outfit in the way of material consisted of a Spanish quarter and a vial of mercury, their case of instruments, a file and two or three drills, or excavators. I have seen a filling made under these circumstances that did good service for twenty-five years, when it was removed and the cavity filled with gold.—G. L. Shepard, D.D.S., in *Archives of Dentistry.*

THE PHYSIOLOGICAL ACTION OF MENTHOL.

Dr. Goldscheider, at a meeting on April 9, of the Physiological Society of Berlin, discussed the action of menthol on the sensory nerves. It was well known that it produced on the skin a sensation of cold, which was commonly applied to evaporation. On the other hand, the same sensation, when produced in the mouth by solutions containing menthol or peppermint, was explained by a supposed astringent effect. Dr. Goldscheider had come to the conclusion that neither of these explanations was correct. He made his experiments with a solution of menthol in lanolin, which he rubbed into circumscribed regions of the skin. After the rubbing, the thermometer showed, in all such places, an increase in temperature to the extent of 2° C., notwithstanding the marked sense of cold produced. The hypothesis of evaporation was excluded by the fact that the feeling of cold was no less marked when the part rubbed was covered with a watch-glass, and could, therefore, be produced only by direct stimulation of the nerves of sensation of cold. Again, if of corresponding places on the forehead, where these nerves are most abundant, one were rubbed with the menthol ointment, and the other not, bodies which previously had caused no particular sensation would be felt as cold on the former spot, but not on the latter. Dr. Goldscheider, observing that while some regions, as the forehead, were especially sensitive to cold, others, as the elbow and the volar side of the wrist, were so to heat, found that the inunction of these with menthol produced a sensation of warmth, though less striking than that of cold in the former regions; and he called attention to the recent communication of Prof. Herzen on the precisely analagous results of pressure on the nerve-trunks in these regions respectively. He therefore concluded that the sensations, in some places of cold, and in other places of heat, produced by menthol, were purely subjective and consequent on the direct stimulation of the special nerves of temperature, those usually cognizant of cold being far more sensitive to its influence than were those adapted to receive impressions of higher temperatures.—*British Med. Jour.*

ON IODOL, THE NEW ANTISEPTIC.

Among the many new antiseptic remedies that recently have been introduced into surgical practice, iodol is among the most likely to retain its place. Iodol, or the powdered iodide of pyrrol (C_4I_4NH), is a light fawn-colored micro-crystalline powder, odorless, and almost tasteless. It contains 88.9 per cent of iodine. It is soluble in warm oil, 1 to 7; alcohol, 1 to 3; and ether, 1 to 2; and also in chloroform. It may be used with success in all cases where iodoform is indicated. It is non-poisonous, and is eliminated from the system as iodine. Dr. Wolf has found from his experiments made on rabbits that a ten per cent. solution in oil produced no irritation. Drs. Mazzoni and Rocci have employed it over two hundred times.

In ulcers where there is very marked necrobiosis, the good effect of iodol is very remarkable,—the foul smell disappears, the secretion diminishes, and the ulcer changes in a short time to a healthy granulating wound. In atonic ulcers also the result was likewise favorable: even after two applications a distinct improvement was to be observed. On the other hand, iodol was quite ineffectual in sloughing ulcers where there were marked sloughs; in these cases its use had to be discontinued, since not only did no improvement ensue, but the disease extended. The cause of this seemed to be that the iodol in such cases is washed away by the fluids which are secreted in such quantity, and that in employing alcoholic solutions the iodol is precipitated and then carried away.

As regards the principle of the action of iodol, it is probable that, as in the case of iodoform, very small amounts of iodine are constantly being liberated at the place where it is applied, and that on this the local therapeutic effect of the remedy depends. The nascent condition of the iodine seems to render possible the further combinations to form iodide of potassium and iodide albuminate, under which condition it is absorbed. The liberation of the iodide from iodol, especially when this is in the form of iodol gauze, may be more certain than in the case of iodoform. Iodol gauze dressings show, after remaining on for a single day, a distinct separation of iodine in the gauze, and also a marked brown coloration in the neighborhood of the wound; very probably this liberation of iodine is occasioned by the warmth of the body, though possibly also by a fermentation occasioned by the secretions from the wound. That the former plays a part may be seen from the fact that iodine is liberated when iodol gauze is heated in a test-tube, and also a development of iodine may be observed in the gauze when it is kept at a temperature of 39° C. for twenty-four hours on a water-bath.

Although iodol is far from being perfection as an antiseptic, —for on account of its very slight solubility in water, 1 in 500, and also on account of its present high price, many would prefer another drug,—nevertheless we cannot refuse to admit the great advantages of its mildness of action, its power of deodorizing secretions, the absence of the formation of crusts, and its being almost completely free from odor. The greatest advantage would also accrue if, in addition, its employment should be unattended with any poisonous results.—*Therapeutic Gazette.*

Editor's Specials.

"Write the Vision and make it plain."

THE JOURNAL FOR 1887.

Most readers of the Journal have seen, and we trust have read the Publishers' Prospectus. A prospectus, with its dignity as a Latin word, ought to tell all concerned, what the prospect is in reference to the matter of which it speaks. And even though such documents are often, if not generally regarded as similar to targets for boys to shoot at, showing how far they miss the mark, it is the full intention of the editor to work up to the standard set forth. This implies both hard work and help. Thanks to the generosity and popularity of the publishers, valuable and efficient help has been secured in the way of special contributors.

The aim of the publishers has been to secure as contributors those who have shown special qualifications in definite lines of thought.

While fully appreciating the older writers—for with age is wisdom—the Journal wishes to heartily encourage the young. They are often too bashful to offer their thoughts for publication.

And their lack of experience causes them to be modest overmuch. Often the young surpass the old in manipulative ability; and many times a description of their manipulations would furnish most interesting reading. To such we say write for your own good, and in so doing you will do good to others.

The proposed modifications and improvements set forth in the prospectus, involve greatly increased editorial labor, and a great increase of expense to the publishers. We believe we are warranted in trusting the profession to furnish a correspondingly increased patronage. Every dentist in Ohio ought to have the OHIO JOURNAL. It is a natural and legitimate representative of the profession in Ohio. And what is good for Ohio is good for other states—good for all states, territories, districts and provinces. That is a description of its characteristics in the past years of its existence. In the future we shall aim to have it fit for "the earth * * * and the fullness thereof;"—"for the world and those that dwell therein;" and, by the help of our good friends, we hope to succeed. Illness and a series of mishaps, not likely to occur again, caused us to fall behind in our editorial work, but we hope to catch up during the coming year.

As a general rule the first number of the volume is detained on account of re-setting advertisements, etc. The coming number will not likely prove an exception; but we hope soon to be out earlier in the month, and to keep up with the times in the future.

We close this with a personal appeal to our professional friends of the olden time. In our early editorial experience you wrote articles for us which have blessed the world ever since. Do it again. You can. Will you?

LABORATORY INQUIRIES ANSWERED.

WE are sure all concerned will be pleased to know that we have arranged with DR. L. P. HASKELL, of Chicago, to answer the questions of the JOURNAL readers, through its pages. The information imparted will be practical as our readers know from the tastes they have had heretofore; and we hope our correspondents will take advantage of the large experience resulting from Dr. Haskell's forty year's practice, and thus not only benefit themselves, but all the other readers of the JOURNAL.

"A WHEEL WITHIN A WHEEL."

Otherwise a specialist within a specialty. And this refers to our own Dr. Geo. W. Keely, whom we all know and esteem—know on purpose to esteem him. And he is not the Keely motor, for it is supposed to be *statu quo*, but he is Keely, the mover. He has moved along with the advance of the profession till the yankee power, the force of circumstances, with all its potency has impelled him to take up "Irregularities of the Dental Arch," as a specialty. This is a step and a long step in the right direction; and we are glad to know that already many of the best in the profession recognize not only his high qualifications in this line, but the propriety of the plan adopted. And they manifest this recognition by sending important cases to him for treatment. This is right, and their example should be followed by all within striking distance, which, in these days of rapid transportation, must mean all in North America, and in the islands of the sea.

The first time our eyes fell on Our Keely, he and two others were selecting teeth in Dr. Brown's dental depot. One of the others asked Dr. K. if he thought he had made a good selection, at the same time showing him the teeth waxed in place on the plaster model. Dr. K. replied, They will be easily fitted, but without seeing your patient I can tell nothing as to how they will appear in the mouth.

This showed good sense and careful thought; and we have watched the doctor ever since; and we can say with confidence that no one has seen, in the mouths of his patients, semicircular rows of ivory blocks looking about as much like teeth as would the same number of white beans similarly placed and arranged.

Those who have read Dr. K.'s practical articles, as illustrated in the Ohio Journal, must have noticed his wonderful confidence in the powers of Nature to bring the mal-placed dental organs into their proper positions, after the obstructions are out of the way. And herein, we think, lies the secret of his great success. The votaries of Nature make no mistakes in their devotions so far as science goes. She performs all that is promised.

It is not necessary to say that Dr. K. is quite unaware of what is in store for him on this page; and he may debate the case with us by an argument in the shape of a white thorn cudgel. True, he knows that we approve his course of action; and he knows that we sometimes give expression to our thoughts and feelings. Yet he may think this looks a little like advertising; but the reader can rest assured that this is our's—not his.

Societies.

"Wherewith one may edify another."

THE OHIO STATE DENTAL SOCIETY.

TWENTY-FIRST ANNUAL MEETING, TOLEDO, OCTOBER 26, 27, 28, 1886.

This proved to be one of the best meetings ever held. The new constitution worked admirably and was much lauded for its new features in saving the time of the society, by transacting all the routine business outside the meetings and in the method of electing members. Some were disappointed in not obtaining membership, but it is not known to any except themselves and the Board of Directors, and by meeting the requirements for membership, they may gain admittance next year. The Journal advocated the present plan long before it was adopted and is pleased with the result.

About one hundred members and visitors were present and they all seemed to stick to the meetings—something unusual, but which may be accounted for by the absence of the too numerous dental depots usually present. The meetings were held in the City Council Chamber, Masonic Temple Building. At the opening session, Tuesday, President F. H. Rehwinkel was in the chair. Rec. Secretary J. R. Callahan was at his desk. Prayer by Rev. W. W. Williams, of Toledo.

Treasurer Geo. W. Keely stated that no one had a right to speak until he had paid his dues, which gave visitors a decided advantage, for a resolution was carried giving the privilege of debate to all visiting dentists. President Rehwinkel said his attention had been called to an announcement in a Toledo paper, and wished to ask the Committee of Arrangements if they had arranged to have "vitalized air" administered and tested in the society by one Dr. L. L. Barber, of Toledo, who so advertised in the local paper. The committee promptly disclaimed all knowledge of the matter and the society proceeded to business.

Three journals sent special reporters: The *Dental Register*, Cincinnati, E. G. Betty; *The Dental Review*, Chicago, W. H. Whitslar, Youngstown, and the Ohio Journal of Dental Science, Toledo, W. H. Sillito, Xenia.

The State Board of Dental Examiners issued certificates to the following candidates: C. C. Scott, Celina; E. E. Daboll, Salem; C. H. Griffin, Ravenna; S. G. Downey, Lorain.

Among those present from a distance, we noticed from Illinois, Chicago, *W. W. Allport, *A. W. Harlan, *T. W. Brophy, *Eugene Talbot. Indiana, Fort Wayne, *S. B. Brown, *W. W. Shryock; Indianapolis, *P. G. C. Hunt. Michigan, Ann Arbor, W. H. Dorrance; Bay City, *C. B. Porter; Detroit, *Geo. L. Field, C. H. Land, *F. W. Cawson, *James Cleland, *G. S. Shattuck; Eaton Rapids, L. L. Davis, President Michigan State Dental Association; Jackson, *J. A. Robinson; Kalamazoo, *A. T. Metcalf. Kentucky, Covington, *J. S. Cassidy. Pennsylvania, Meadville, Geo. Elliot.

* Honorary Members.

We noted from Ohio, Akron, *J. W. Lyder; Bowling Green, B. R. Taber; Bucyrus, *J. S. McCarrell; Cincinnati, J. Taft, *C. R. Taft, H. A. Smith, E. G. Betty, *C. M. Wright, *J. I. Taylor, C. H. James; Cleveland, D. R. Jennings, C. R. Butler, A. Stephan, *J. R. Bell, *Ira Brown, Henry Barnes, J. E. Robinson; Columbus, A. F. Emminger; Chillicothe, F. H. Rehwinkel; Cadiz, H. H. Harrison; Circleville, W. R. Lilly, Celina, *C. C. Scott; Defiance, *S. D. Potterf, J. L. Scott; Delta, *W. H. Baldwin; Delphos, *W. T. Chambers; Gallipolis, *J. A. Lupton; Granville, *W. H. Sedgwick; Hicksville, C. V. Tannehill; Hillsboro', J. R. Callahan; Kent, L. P. Bethel; Marion, *E. H. Raffensberger; Martin's Ferry, W. P. Hall; New Vienna, W. H. Hague; Norwalk, A. Terry; Napoleon, *A. S. Condit; Oxford, G. W. Keely; Oberlin, *J. F. Siddall, H. G. Husted; Painesville, *G. H. Wilson; Portsmouth, W. D. Tremper, *Geo. Dennis; Portage, I. N. Applegate; Plymouth, *T. S. Seely; Sandusky, *E. J. Waye; Springfield, F. C. Runyan; Toledo, C. H. Harroun, *R. L. Evans, *S. Clippenger, *E. D. Scheble, *J. A. Stipp, C. W. Munson, L. L. Barber, S. C. Taylor; Upper Sandusky, *J. A. STOCKTON; Van Wert, *H. S. AINSWORTH; Wilmington, CHAS. WELCH; Wadsworth, *T. C. LEITER; Washington C. H., *J. F. DENNIS; Xenia, W. H. SILLITO; Youngstown, *F. S. WHITSLAR, *W. H. WHITSLAR, and others whose names we did not get.

* Elected to active membership at this meeting. Members in small caps.

The following officers were elected to serve one year: President, H. H. Harrison, Cadiz; First Vice-President, C. M. Wright, Cincinnati; Second Vice-President, J. E. Robinson, Cleveland; Recording Secretary, J. R. Callahan, Hillsboro'; Treasurer, Geo. W. Keely, Oxford. The Secretary was authorized to appoint an Assistant Secretary.

For three years—Members of Board of Directors: E. G. Betty, Cincinnati; F. C. Runyan, Springfield; W. H. Hague, New Vienna; Chas. Welch, Springfield. The members of the Board holding over are H. A. Smith, J. Taft, C. H. Harroun, A. F. Emminger, D. R. Jennings, C. R. Butler, F. A. Hunter, W. R. Lilly. Those elected were their own successors except W. H. Hague who succeeded M. H. Fletcher.

F. H. Rehwinkel and J. Taft were re-elected to the State Board of Examiners, the other members being H. A. Smith, E. G. Betty, C. R. Butler.

In selecting a place of meeting for 1887, Springfield was chosen. The other places in nomination were Steubenville, Youngstown and Dayton.

The President appointed the following standing committees:

Arrangements—F. C. Runyan, Springfield; J. E. Robinson, Cleveland; W. H. Hague, New Vienna.

Publication—E. G. Betty, Cincinnati; J. R. Callahan, Hillsboro; C. M. Wright, Cincinnati.

Membership—C. H. Harroun, Toledo; F. H. Rehwinkel, Chillicothe; D. R. Jennings, Cleveland.

Pending amendment to the Constitution changing the time of meeting, the Society adjourned to meet at 10 o'clock, A.M., the last Tuesday of October, 1887, in Springfield, Ohio.

THE TITLE OF DOCTOR, says the *Independent Practitioner*, was invented in the twelfth century, at the first establishment of the Universities. William Gordeina was the first person upon whom the title of Doctor of Medicine was bestowed. He received it from the college at Asti, in 1329.

Books and Pamphlets.

INDIANA STATE DENTAL ASSOCIATION—Transactions 28th annual meeting. Held in Indianapolis June 30, July 1, 2, 1886. Published for the society by Mrs. W. M. HERRIOTT, Indianapolis.

It contains essays by Drs. A. W. Harlan, S. B. Brown, H. B. Knapp, U. L. Blu, J. E. Cravens, and M. H. Chappell.

The above pamphlet is another specimen of transactions without an editor, or even a proof reader. The printer seems to have done his worst on the paper entitled Pain Obtunders, where among other things we find lockage for leakage, cannabis indicus for Cannabis indica, kora-kora for kava-kava, pointed for painted, Cooke, Davis & Co. for Parke, Davis & Co., etc. That the transactions were not edited is made plain by the admission of the paper on "The management of pulpless teeth." Where the use of such terms as "dead" teeth for pulpless, apexal for apical, is a small matter compared with the unscientific and slurring tone of the whole paper, which the author must have intended for a burlesque. We cannot believe that he was in earnest when he wrote it. The majority of published dental society reports, wofully lack editorial supervision and go forth as if endorsed by the society, to bring down upon us the criticism of the foreign dental journals that we are illiterate and unscientific, and of the medical press that we are not capable of treating diseases of the teeth except mechanically. We have had occasion to criticise the Ohio and other societies and hope all societies publishing transactions will see and act upon the necessity of providing a competent editor with unlimited powers.

CATARRH OF THE UPPER AIR TRACT, especially its effects on the ear. By SAMUEL SEXTON, M.D. Reprinted from *The Medicol Record*, January 30, 1886. New York, J. H. Vail & Co. 33 pages.

An excellent monograph containing many valuable suggestions, although Dr. Sexton still insists without qualification, that "the retention of pulpless teeth should be avoided, especially in persons wanting in nervous tone." He calls attention to the importance of the relation of dental irritation, too often overlooked in aural trouble.

THE DENTAL REVIEW, devoted to the advancement of dental science. Published monthly for The Dental Review Co. By W. T. Keener, 96 Washington Street, Chicago. $2.50 a year.

The first number, for November 15th, is before us and gives promise of good things to come. The most notable article is that by Dr. Black on the Periosteum and Peridental Membranes, accompanied by a double page supplement of illustrations. Anything Dr. B. writes is worthy of study and we congratulate the *Review* on having secured such an attraction for its first year. The editor of the *Review* is not announced, but is rumored that our friend, Dr. A. W. Harlan, is the man.

THE WESTERN DENTAL JOURNAL, edited by Dr. J. D. Patterson, late of the *Missouri Dental Journal* and published monthly by R. I. Pearson & Co., Kansas City, Mo., at $2 a year.

The first number of the above journal is announced to be issued January 1st, 1887. It is to be "devoted exclusively to the interests of the dental profession," but isn't that what we all claim? The editor is to be assisted by Drs. A. H. Thompson, of Topeka, and C. L. Hungerford, of Kansas City, both of them well known writers.

While upon the subject of dental journals, we wish to remind the readers of the Journal, that now is the time to send in their renewals for 1887. See prospectus in this number. When doing so, order one or more, or all of the other journals, for which Messrs. Ransom & Randolph will forward your subscriptions. You may be able to run your office without attending dental society meetings, but you can't keep up with your brethren unless you read the journals.

Lindsay & Blakiston's Physicians' Visiting list for 1887, 36th year, is brought out in the usual variety of sizes, ranging in price from $1 to $3. We cannot better describe it than by quoting the *Medical Record*, "For completeness, compactness, and simplicity of arrangement it is excelled by none in the market." Our readers will find it advertised in this number of the Journal. Published by P. Blakiston, Son & Co., Philadelphia.

Our Aftermath.

Double Dislocation of the Jaw from Vomiting.—I was summoned in great haste, and informed that "Mary (my patient) had vomited her jaw out." To my great surprise she had produced double dislocation of the jaw, which was reduced with some difficulty. I report this occurrence because it seems to me to possess unusual interest, both in the manner of its production and from the fact that both sides were dislocated instead of but one, as is generally the case.—Curtis, in *N. Y. Med. Press.*

Herbst's Method with the Rubber Dam.—Dr. Herbst uses no clamps for retaining the rubber dam, except on the third molars. He takes an ordinary pin and clips the point a little, curves the entire length, and flattens it slightly also, and introduces it at the necks of the teeth, and in this manner catches the rubber on the two ends simply for holding until he secures it, then confines it by ligature and removes the pin; thereby, as he claims and as would seem at a glance to be true, reducing the discomforts to a minimum. —*Archives of Dentistry.*

Microbes cease to exist, according to Miquel, at a height above the sea-level of from one to two miles. In city streets, however, there are five thousand to the cubic metre of air.

Chewing-gum as a Fattening Agent.—A southern secular paper is authority for the following statement regarding the fattening effect of chewing-gum: "Twenty years ago the rule was the Southern women were thin and delicate; it is not the rule now. Southern women are not physically equalled in all North America. Any physician who is as well informed as he ought to be, will tell you that this is true. This change is due to the habit of chewing gum. You may smile, you may even laugh if you please, but I am telling you a plain fact. As to Southern men, they are as thin and gaunt as they ever were, and so they will remain until they cease to chew tobacco and begin to chew gum."—*Medical and Surgical Reporter.*

Make Notes.—A carefully kept series of note and scrap books will in a few years form a professional library of much value.

Anæsthesia and the Chinese.—Some works in the National Library of Pekin contain undeniable proofs that Chinese medical men at an early period, used anæsthetics during their operations. This practice is due to a celebrated Chinese physician who lived at an epoch between the 220th and 230th year of the Christian era. They administered to their patients hachish (canabis indica), which rendered them insensible.

HYDRONAPTHOL—A NEW ANTISEPTIC.—Is highly commended, by F. Eschauzier, D.D.S., Brooklyn, (October *Dental Cosmos,*) for treating pulpless teeth. It is a derivative of the hydroxyl substitution of napthalin. As an antiseptic, it is about one-fifth as powerful as the mercuric chloride; from one and a half to double the strength of iodine, and four times as strong as sulphurous acid. Carbolic and salicylic acids follow in the list of antiseptics, and it is thirty times as powerful as the latter. It is non-poisonous, non-corrosive, and a non-irritant.

PORCELAIN DENTURES.—108 years ago, Francais Gillanders took out his patent, No. 1199 on October 22nd, for producing a vitrified enamel, for facing bone and ivory dentures. In the year 1820, Delabarre of Paris, was working the porcelain process.. In 1824 Dr. John Allen commenced his experiments. In 1849 George Fellows Harrington, patented his invention, No. 12717 August 1st, for continuous gum facings, and dentures, made without special reference to any particular case, but applicable to all edentulous jaws, perfect coaptation being obtained by the addition of a bone or ivory base. In 1850 Cuthbert Dinsdale took out his patent, No. 1304, April 15th. For porcelain gums. In 1852, Dr. W. Hunter generously published his modes, and formulas. In 1853 John Allen's modes, and formulas were patented in this country by Geo. Laurie, as a communication to him from John Allen. Patent No. 2386, Oct. 15, and in 1854, Her Majesty's Commissioners granted letters patent, No. 180, Jan. 24, to W. Massey for Porcelain gum formulas.—*British Journal Dental Science.*

IF NOT, THEN WHY NOT?—LEPROSY AND SYPHILIS.—In olden times when leprosy was rife the leper was an outcast. The civil law of the land compelled those thus afflicted to live apart from their fellows, and to cry out "*Unclean, unclean, unclean,*" whenever approached by one not of their kind. And why this seclusion? Because it was recognized that this horrible disease was contagious, and it was only by the strictest isolation that its spread was controlled. By such precautions the disease has been controlled, and it is only in certain portions of the world that we to-day hear of it. But, how about the syphilitic—is he not also *unclean*, and is it not dangerous to allow him to go abroad among his fellow men and women? What terrible havoc may be made by a man or woman with mucous patches in his or her mouth, and how many are so afflicted, unsuspected by their fellow men?

We full well know that sexual intercourse is not necessary for the transmission of syhilis from one to another; and so knowing, we ask whether there is not the same need to-day to isolate the syphilitic as there was in biblical days to prohibit the going abroad of the leper. If not, then why not?—ED. *Medical & Surgical Reporter.*

IODOL AND TEREBENE—Iodol 10 gr.; Terebene 1 fl. oz. Dissolve and keep in bottles of nonactinic (deep amber-colored or ruby) glass; or keep in ordinary bottles in a dark place.

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OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH.
TOLEDO, OHIO.
Entered at Post Office at Toledo, as second-class matter.

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Communications intended for the Editor should be addressed to "DR. GEO. WATT, Xenia, O."

Subscriptions and Advertisements send to the Publishers,

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TOLEDO, O.

Caulk's Dental Annual for 1885-1886.

NUMBER FOUR.

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Also a list of Dental inventions, with name and address of the inventor, for the year 1885; number of Dental Colleges, when organized, graduates, etc., Dental Necrology, Dental Periodicals, etc.

Among the original articles is one on "The Dental Profession in Canada," also an interesting report on "Record of Artificial Dentures," etc.

The character of this work is such that it is not thrown aside soon as received, but is placed in the library and kept on file for future reference, and the present issue is a valuable one in this respect. Send in your orders early. Every live and progressive Dentist should have a copy.

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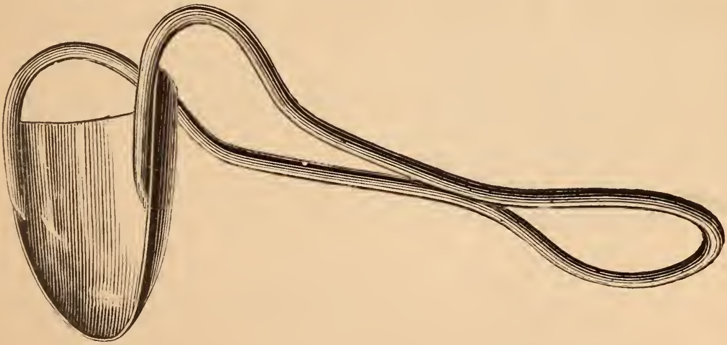

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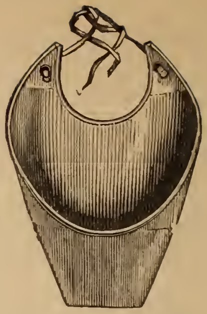

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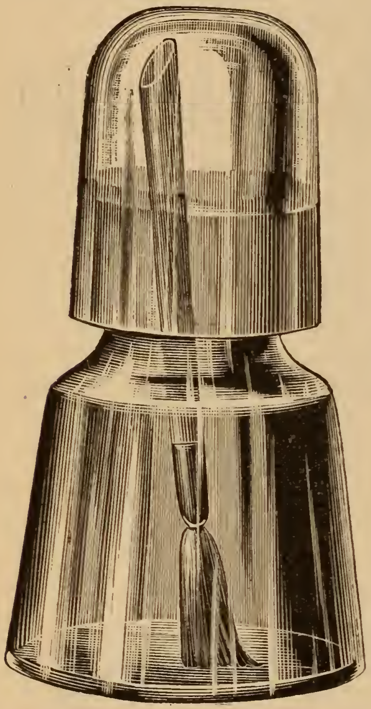

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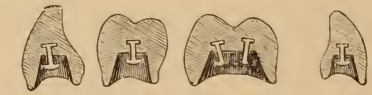

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DENTAL ENGINES AND EQUIPMENTS. Containing illustrations of Engines, Hand-pieces, Burs, Drills, Mandrels; Right, Acute and Obtuse-Angle attachments, and everything pertaining to or used with Dental Engines.

ELECTRO-MAGNETIC MALLET. Containing illustrations of the Mallet and Battery, Plugger Points, Directions and Testimonials.

COFFER-DAM RUBBER AND APPLIANCES. Containing illustrations of Punches, Holders, Clamp Forceps, Clamps, etc.

EXTRACTING FORCEPS, Etc. Containing complete line of Forceps in full-size illustrations, Turnkeys, Stump Extractors and Lancets.

IMPRESSION TRAYS. Containing full-size illustrations of the whole line of Impression Trays, with prices, etc.

LATHES AND EQUIPMENTS. Containing illustrations of Office and Laboratory Lathes, Chucks, Vulcanite and Solder Burs; Brush, Cotton, Felt, Cotton-Duck and Corundum Wheels, etc.

CORUNDUM CIRCULAR. Containing illustrations of Wheels, Files, Slabs, Cones and Cups.

NEW-MODE HEATER. Containing illustrations of the Heater and directions for working it, together with Burners, etc.

DENTAL FURNITURE. Containing full list of Chairs, Cabinets, Spittoons, Brackets, Stands, Attachments, etc., with an article on the "Care of Dental Machinery."

LIQUEFIED NITROUS OXIDE GAS AND APPARATUS. Containing illustrations and descriptions of apparatus for office and travelers' use.

SPECIALTIES FOR THE MOUTH. Dentists' edition, containing a full line of Tooth-Powders, Mouth-Washes, Soaps, Paste, Tooth-Powder Bottles, Boxes, Tooth-Brushes, Toothpicks, etc., with quantity prices.

SPECIALTIES FOR THE MOUTH. Popular edition, the same as the dentists' edition, but with retail prices only.

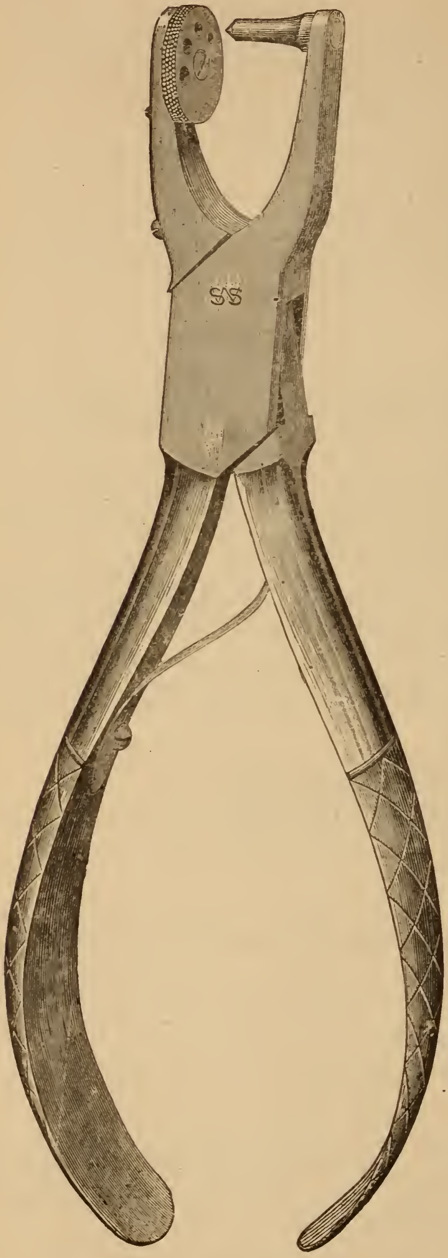
ALSO, CIRCULARS of Electrical Apparatus, such as Mouth Lamp, Laryngoscope, Lantern, Cautery, etc.; and the revised lists of Cone-Socket Instruments, so far as completed, viz., Excavators, Explorers, Nerve Instruments, Burnishers, Chisels and Scalers.

THE S. S. WHITE DENTAL MANUFACTURING CO.

Philadelphia, New York, Boston, Chicago, Brooklyn.

Ainsworth's Rubber-Dam Punch

Patented July 1, 1879.



We have secured the exclusive right to manufacture the Rubber-dam Punch herewith illustrated.

It differs from other appliances of its class in having a solid cone punch, which cuts the rubber against a perforated die having four holes of graded sizes. The die is readily rotated to bring either hole beneath the punch.

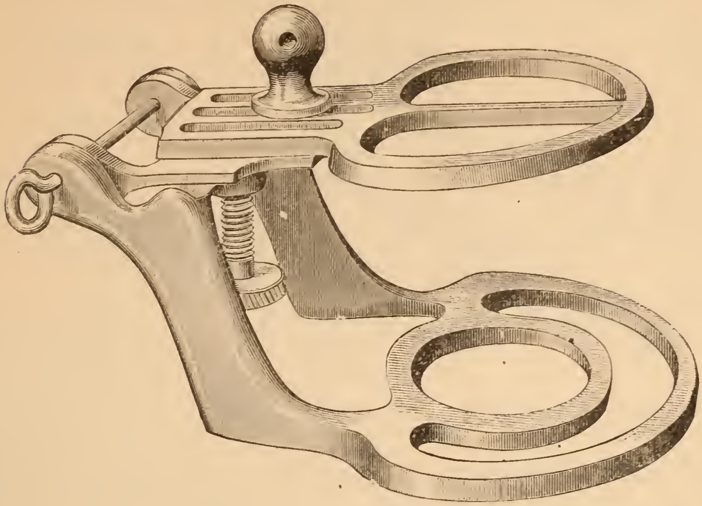
The tool is made and finished in the style of our best forceps and wedge-cutters. It is an excellent and efficient device, resolving what has heretofore been a serious impediment in the convenient use of the rubber dam.

Price, Crocus-polished - -	$3.25
" Nickel-plated - - -	3.50

THE S. S. WHITE DENTAL MANUFACTURING CO.,

Philadelphia, New York, Boston, Chicago, Brooklyn.

PLAIN-LINE ARTICULATOR.



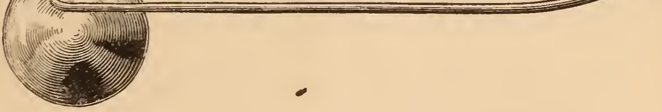
This Articulator is made to meet a demand for a low-priced article. It is fully equal, if not superior, to any offered elsewhere at one dollar.

It is designated Plain-Line to distinguish it from our regular No. 2.

Price - - - - - - - - - - - 90 cents.

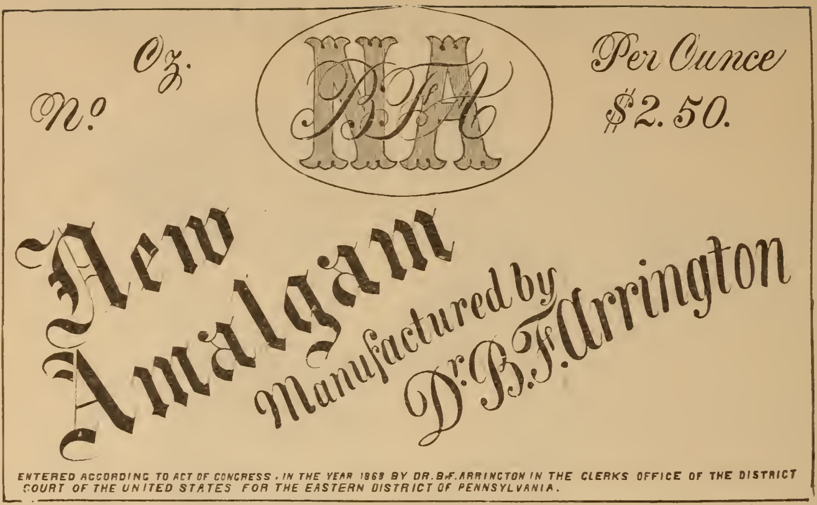
ELLIOTT'S CHEEK DISTENDER.

IMPROVED FORM.



This convenient device is, as its name implies, designed to distend the cheeks of a patient during operations on the teeth. Its bow of spring-wire and the cheek-pieces are polished and nickel-plated. It serves, in connection with its principal use, to reflect light on the teeth. As the spring is not stiff, it is used with very slight inconvenience to the patient. Our cut is about half size.

Price - - - - - - - - - - - - $1.00



No. Oz.

BFA

Per Ounce $2.50.

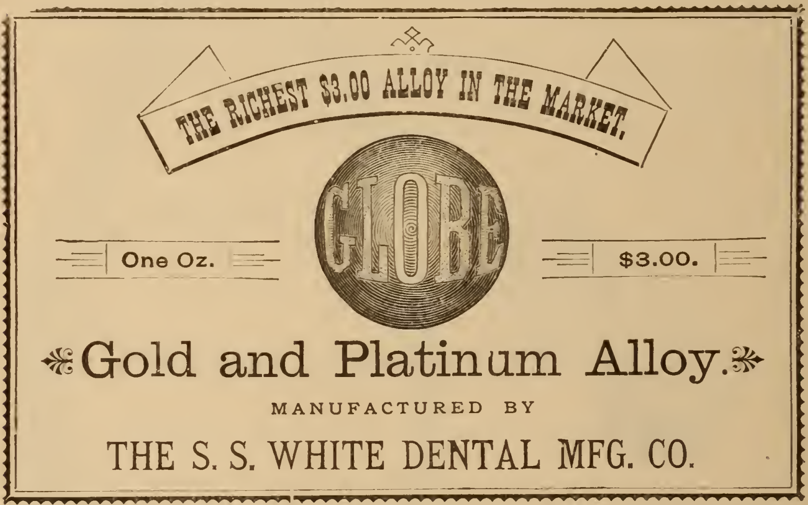
New Amalgam

Manufactured by Dr. B. F. Arrington

ENTERED ACCORDING TO ACT OF CONGRESS, IN THE YEAR 1869 BY DR. B. F. ARRINGTON IN THE CLERKS OFFICE OF THE DISTRICT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF PENNSYLVANIA.

This has been the leading amalgam in the market for nearly a quarter of a century, outselling all of its competitors and steadily increasing in popularity each year. None of the higher-priced amalgams which have been so extensively advertised have a better record in the saving of teeth than Arrington's. Put up in quarter-ounce, half-ounce, and ounce envelopes.

Price - - - - - - - - - per ouuce $2.50



THE RICHEST $3.00 ALLOY IN THE MARKET.

One Oz. GLOBE $3.00.

Gold and Platinum Alloy.

MANUFACTURED BY

THE S. S. WHITE DENTAL MFG. CO.

This is an alloy of tin, silver, gold, and platinum. While a reference to the price will show that we cannot claim a very large percentage of the more costly metals, we do claim that it is richer in silver, platinum, and gold than any alloy heretofore put on the market at that price. For all purposes where a platinum-and-gold alloy is desirable, this preparation is confidently recommended as the most useful and valuable yet offered at so low a figure.

Price, per single ounce - - - - - - - -	$3.00
" " two ounces - - - - - - - -	5.50
" " four ounces - - - - - - - -	10.00

THE S. S. WHITE DENTAL MANUFACTURING CO.,

Philadelphia, New York, Boston, Chicago, Brooklyn.

PLATINUM ECLIPSE ALLOY

OZ

This Alloy is new to this country and unlike any other. It sets very quickly, finishes with a splendid luster, has unusual edge-strength, is almost entirely free from shrinkage, and remains white in nearly all mouths. Put up in ounce and half-ounce envelopes.

Price - - - - - - - - - per ounce $3.00

Holmes's Star Amalgams.

TWO GRADES.		No. 1. " 2.

No. 1. A GOOD MODERATE-PRICED AMALGAM. — **PRICE:** **Per Ounce, $2.50.**

No. 2. **A HIGH-GRADE** **Gold and Platinum Alloy,** extensively known for its strength of edge, density, brightness of color, and non-shrinking qualities. — **PRICE:** **Per Ounce, $4.00.**

It has been freely and voluntarily pronounced by many dentists to be *far superior to any other gold and platinum alloy*, notwithstanding the fact of its being from twenty to thirty per cent. below others in price.

TOWNSEND'S AMALGAM.

Made from the old formula of Dr. Townsend; is an excellent Amalgam and has a large sale.

Price - - - - - - - - - per ounce $2.00

TOWNSEND'S IMPROVED AMALGAM.

Mainly Dr. Townsend's formula, with an improved cut and *more expensive* manipulation.

Price - - - - - - - - - per ounce $2.50

THE S. S. WHITE DENTAL MANUFACTURING CO.,
Philadelphia, New York, Boston, Chicago, Brooklyn.

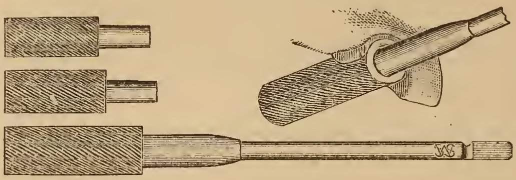
Gutta-Percha Nerve Canal Points.

These Points are made of our "Premium" Gutta-Percha. They are symmetrically tapered and much more uniform than those of other manufacturers.

Put up in boxes containing 100 Points.

Price - - - - per box 50 cents.

HERBST'S ROTARY FILES.



Dr. Bödecker introduces the devices of Dr. Herbst for rapidly, safely, and truly cutting natural tooth roots to receive artificial crowns. The reduced end of the file-cut cylinder is shellacked into the socket of a porte-polisher, and so may readily be replaced when worn.

The outer end of the file is used to cut down to the gum margin, finishing with the heel, which will cut below the labial margin of the gum without wounding it. The Rotary Files are made in three sizes.

PRICES.

Mounted, Complete - - - - - - -	each	$0.50
Porte-Polishers Separate - - - - - -	"	.25
Files - - - - - - - - - - -	"	.25

DENTAL RUBBERS.

"OUR SPECIALTIES."

Bow Spring.—Put up in $\frac{1}{4}$, $\frac{1}{2}$, and 1 lb. tin boxes, per lb., $2.75, or in 10-lb. lots - - - - - - - - - -	per lb.	$2.48
No. 1 Improved.—Put up in $\frac{1}{2}$ and 1 lb. paste-board boxes, per lb., $2.25, or in 10-lb. lots - - - - - - - - -	per lb.	2.03
Black.—Put up in $\frac{1}{2}$-lb. paste-board boxes - - - -	per lb.	2.25
***Pink, No. 1.**—Put up in $\frac{1}{2}$-lb. paste-board boxes - - -	per lb.	5.00
Pink, No. 2.—Put up in $\frac{1}{2}$-lb. paste-board boxes - - -	per lb.	4.50
White.—Put up in $\frac{1}{2}$-lb. paste-board boxes - - - -	per lb.	4.00

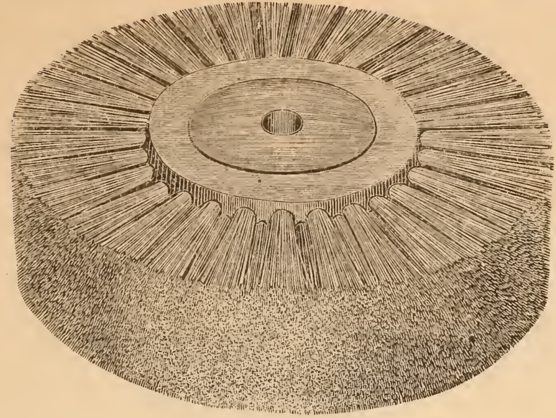
We also have in stock the leading Rubbers of other manufacturers at their regular advertised rates.

*We call especial attention to our Pink Rubber No. 1, as being fully equal in every respect to the best higher priced Pink Rubbers now on the market.

THE S. S. WHITE DENTAL MANUFACTURING CO.

Philadelphia, New York, Boston, Chicago, Brooklyn.

NOVELTY BRUSH WHEELS.



Cut Shows No. 29.

The hubs of these wheels are made of leatheroid. They are strong and will not split nor allow the bristles to push back or become loose. They have also a decided advantage in their small size, which permits their use in polishing articles of irregular shape without risk of marring or scratching. The Novelty Wheels, while superior in quality and neatness of finish to those with the ordinary wood centers, are only very slightly higher in price. We have the sole agency for the dental trade. The following numbers are now in stock, sizes and numbers the same as those of our wood-center wheels. In ordering state the style wanted.

STRAIGHT BRISTLES (as per cut,)

No.	3.	1	Row Stiff	Bristles,	1¾	inches	diameter	each	$0.20
“	4.	1	“ “	“	1⅞	“	“	“	.20
“	1.	2	Rows “	“	1½	“	“	“	.20
“	2.	2	“ “	“	1½	“	“	“	.20
“	5.	2	“ “	“	1⅝	“	“	“	.25
“	6.	2	“ Medium	“	1⅝	“	“	“	.25
“	8.	2	“ “	“	1¾	“	“	“	.25
“	10.	2	“ Soft	“	1¾	“	“	“	.25
“	7.	2	“ “	“	1¾	“	“	“	.25
“	9.	2	“ “	“	1¾	“	“	“	.25
“	11.	2	“ “	“	1⅞	“	“	“	.25
“	14.	2	“ “	“	1⅞	“	“	“	.25
“	13.	2	“ Medium	“	1⅞	“	“	“	.25
“	12.	2	“ Stiff	“	1⅞	“	“	“	.25
“	19.	2	“ Soft	“	2⅜	“	“	“	.30
“	22.	2	“ “	“	2⅜	“	“	“	.30
“	21.	2	“ Medium	“	2⅜	“	“	“	.30
“	20.	2	“ Stiff	“	2⅜	“	“	“	.30
“	18.	3	“ Soft	“	2	“	“	“	.35
“	17.	3	“ Stiff	“	2	“	“	“	.35
“	26.	3	“ Soft	“	2¾	“	“	“	.45
“	25.	3	“ Stiff	“	2¾	“	“	“	.45
“	50.	3	“ Soft	“	3	“	“	“	.55
“	30.	4	“ “	“	3	“	“	“	.60
“	29.	4	“ Stiff	“	3	“	“	“	.60

CONVERGING BRISTLES.

No.	16.	3	Rows Medium	Bristles,	2⅛	inches	diameter	each	$0.35
“	15.	3	“ Stiff	“	2⅛	“	“	“	.35
“	24.	3	“ Medium	“	2¾	“	“	“	.45
“	23.	3	“ Stiff	“	2¾	“	“	“	.45
“	28.	4	“ Medium	“	3	“	“	“	.60
“	27.	4	“ Stiff	“	3	“	“	“	.60

STRAIGHT BRISTLES—LONG SHANKS.

No.	52.	2	Rows Stiff	Bristles,	1¾	inches	diameter	each	$0.25
“	66.	2	“ “	“	1⅞	“	“	“	.30

CUP-SHAPE BRISTLES—LONG SHANKS.

No.	51.	2	Rows Stiff	Bristles,	1¾	inches	diameter	each	$0.25
“	65.	2	“ “	“	1⅞	“	“	“	.30

THE S. S. WHITE DENTAL MANUFACTURING CO.
Philadelphia, New York, Boston. Chicago, Brooklyn.

"NE PLUS ULTRA."

ESTABLISHED 1846.

PURE GOLD FOIL,

SOFT, MEDIUM AND COHESIVE,

in any number desired.

The "Soft" can be made *Cohesive* by re-annealing,

WE GUARANTEE IT

PURE, UNIFORM, TOUGH,
DUCTILE, MALLEABLE.

QUOTATIONS.

$4 per 1-8; $7.50 1-4; $15 1-2; $29 per oz.

If not kept by your dealer, send direct to

J. M. NEY & CO.,

Refiners and Assayers, HARTFORD, CONN.

—FOR SALE BY—

RANSOM & RANDOLPH, Toledo,

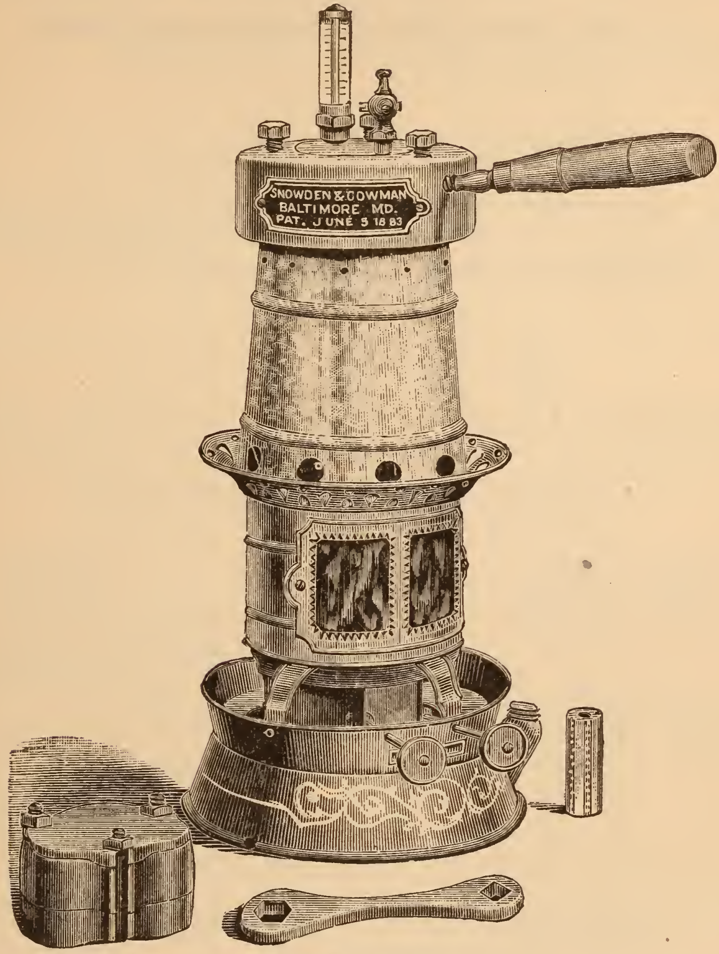
And Dental Depots and their Agents.

WE ALSO FURNISH

Gold, Silver and Aluminum Plate, Tin Foil and Amalgam, and pay CASH or EXCHANGE for Gold and Silver Scraps of all kinds.

SNOWDEN & COWMAN'S

New Patent Vulcanizer.



PRICE:

Complete for Kerosene or Gas, with two Large Malleable Iron Flasks, - - - - - - - $18.00

MANUFACTURED AND FOR SALE BY

SNOWDEN & COWMAN,

86 WEST FAYETTE STREET,
BALTIMORE, MD.

Circulars furnished on application.

MANUFACTURERS OF AND DEALERS IN

DENTAL GOODS,

Of Every Description, at Wholesale and Retail.

SOLE MANUFACTURERS OF

Hayes' Copper Boiler, Hayes' Iron Clad Boiler, Whitneys Vulcanizers, Snow & Lewis Automatic Pluggers, Snow & Lewis Brackets, Lathes, Articulators, Annealing Lamps, Snow's Saliva Ejectors, etc.

Buffalo Dental Manufacturing Co.,

Court Street, Corner of Pearl, Buffalo, N. Y.

GEO. B. SNOW, - - - - - - - - President
THEO. G. LEWIS, - - - - - - Secretary
JOHN E. ROBIE, - - - - - Treasurer and Manager.

Also Sole Manufacturers of the United States of

FLETCHER'S

LABORATORY APPARATUS

(Designed and Patented by Thomas Fletcher, F.C.S., Warrington, Eng.)

Consisting of Hot and Cold Blast Blow Pipes,
Ingot Moulds, Blowing Apparatus,
Gas and Petroleum Furnaces, Ladle Furnaces,
Bunsen Burners, Special Heating Apparatus,
Cricibles, Muffles, Etc., Etc.

B. D. M. Co's Goods for Sale by RANSOM & RANDOLPH, Toledo, Ohio.

R. S. WILLIAMS,

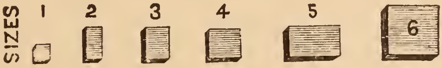
MANUFACTURER OF

Standard Gold Foil,

Standard Gold Cylinders.

Standard Gold Pellets,

Standard Gold Blocks.



Over One Hundred and Fifty Varieties kept in Stock, each differing in quality, size or style.

Standard Electric Gold,

Gold and Platinum Folds.

Amalgam Alloy No. 1,

Standard Gutta-Percha Blocks (for fillings,)

Standard Dental Rubber.

ARE THE BEST.

Send for Price List and Descriptive Circular,

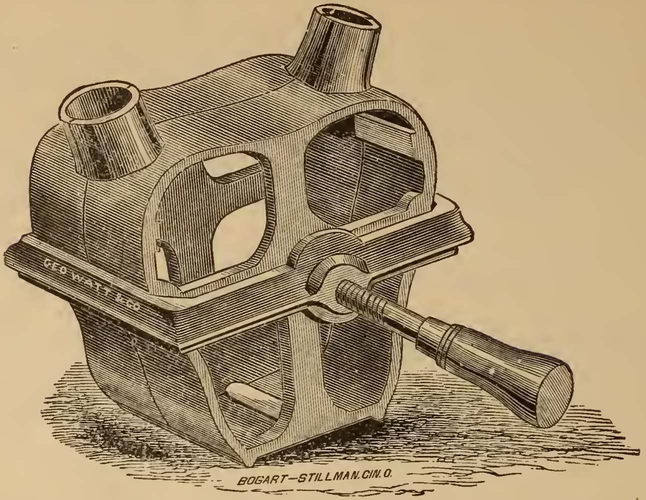
115 West 42nd Street, NEW YORK,

7 doors west of 6th avenue.

For sale by RANSOM & RANDOLPH,

TOLEDO, O., and INDIANAPOLIS, IND

WATT'S MOLDING FLASK.



Price, Complete $1.00. If sent by mail, postage 25 cts.

Manufactured and for sale by RANSOM & RANDOLPH,

Trade Supplied. Toledo, Ohio.

Branch House, Indianapolis, Ind.

WATT'S IMPROVED METAL.

Printed instructions with each Ingot.

This metal is far superior to the well known Watt & Williams metal. It is the result of diligent research, aided by abundant leisure, and long experience in the science of metallurgy.

Watt's Metal is stronger and runs sharper than any in use, while it withstands chemical action within the mouth better than 18 carat gold.

It has no equal for lower plates, gives a much better fit than rubber, celluloid, or gold, and is a good conductor of heat and electricity. Weight is often advantageous; but if shrinkage is very great, a base plate of the metal may be made, and the teeth attached to it with rubber or celluloid. Most beautiful upper or lower dentures may thus be made, and no other work has greater durability.

Molds may be made in almost any flask, but a glance at the cut of the Watt Flask will persuade any one to buy it who intends to use the work.

Above cut shows exact size and shape of the Ingots of new metal. Any other form is an imitation.

BETTER THAN ANY IN USE!

Six Ingots to the Pound. (Postage free.) **Per Ingot, $1.00.**

Ask your Dental Depot for it, or send to

RANSOM & RANDOLPH, Wholesale Agents

83 Jefferson street, **TOLEDO, OHIO.**

RANSOM & RANDOLPH,

—MANUFACTURERS OF—

Soft & Cohesive Gold Foil

We can now supply a Uniform and Reliable Foil, and we think the best in the market, and could give a large number of testimonials from prominent men in the profession, all of which recommend it in the highest terms. Our Soft Foil is

EXTREMELY TOUGH

and can be brought to any degree of cohesion by being annealed. We aim to furnish the Best Gold in the Market, and at as low a price as possible for a good, reliable foil.

Price 1-8 ounce $3.75. One ounce $28.00.

POSTAGE FREE.

RANSOM & RANDOLPH

TOLEDO, OHIO.

IMPROVED SOFT GOLD FOIL.

Price, $3.75 per 1-8th. $28.00 per Ounce.

It has a peculiar softness not obtainable to so great a degree in any other. Do not fail to try it.

Address **RANSOM & RANDOLPH,**
TOLEDO, OHIO.

OCCIDENTAL GOLD FOIL

CHEMICALLY PURE.

RANSOM & RANDOLPH, Dental Depot, TOLEDO, O.

Branch House, Indianapolis, Ind.

Above brand of Gold has become very popular with those who have given it a trial, so much so that it is being imitated by unscrupulous parties, and as a protection we have had the envelope in which it is put up Lithographed. Do not purchase Gold purporting to be Occidental unless it is put up in these Lithograph envelopes. Manufactured in Soft, Semi-Cohesive, Cohesive, and Corrugated, at uniform price, per oz. $30.00 ; per ½ oz. $15.00 ; per ¼ oz. $7.50 ; per ⅛ oz. $4.00.

Give it a trial, we are sure it will please you.

WM. VALLEAU, Jr.,

MANUFACTURER OF

Dental Gold Foils, Amalgams, &c.

DENTAL FILLING, &c.

506 Broome Street, New York City.

We beg leave to call the attention of our patrons, that to our long-established brands of *Soft* and *Cohesive* foils we have added still another, which, for the sake of distinction, we have called "VULCAN." Of this brand we produce two qualities: Cohesive and Semi-Cohesive.

The Cohesive will be found quite cohesive without that stiffness usually found in extremely cohesive foils. The *Semi-Cohesive* is an approach to soft foil, but somewhat stiffer, giving it the appearance of more body; it can be made cohesive by annealing.

As the process of manufacturing this brand ("VULCAN") is somewhat shorter, we have concluded to give our patrons the benefit of the same, and made prices as follows:

Vulcan Cohesive and Semi-Cohesive	$28.00 per oz.
" " " "	14.00 " ½ "
" " " "	3.75 " ⅛ "

The process of manufacturing our old brand of Soft and Cohesive foils being somewhat longer, we are obliged to continue the old prices as follows:

Soft and Cohesive Foil	$30.00 per oz.
" " " "	15.00 " ½ "
" " " "	7.50 " ¼ "
" " " "	4.00 " ⅛ "

We claim for all our foils that they are made of *absolutely pure* gold, and beaten with the greatest care to produce uniformity and toughness, never losing sight of quality for the sake of cheapness. The best makers have demonstrated that *absolutely pure* gold cannot be made cheap.

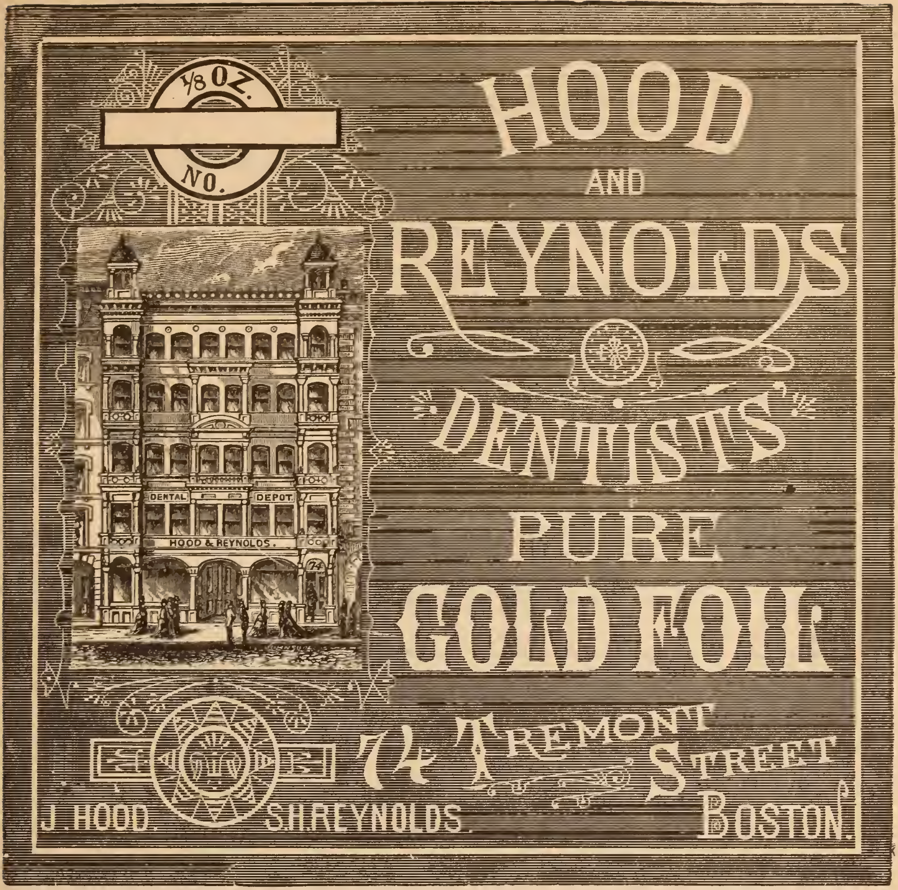
Our Extra Dry Alloy and Improved Amalgam are composed of entirely pure metals, fused and mixed with the greatest care consistent with a view to produce the general effect to be desired in all Amalgams. Teey contain no *Cadmium* or *Zinc*.

Extra Dry Alloy	$4.00 per oz.
" " "	2.00 " ½ "
Improved Amalgam	2.50 per "

All goods can be returned if not as represented.

Sold by RANSOM & RANDOLPH, Toledo, O.

" RANSOM, RANDOLPH & CO., Indianapolis, Ind.



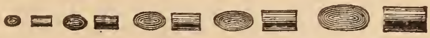
GOLD CYLINDERS.

Two Patents Sept. 19, 1876. Patent Sept. 25, 1876. Patent April 17, 1877.

STYLE A. FLATTENED,
Is the form most generally used.

Style A.

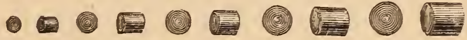
Flattened.



Nos. ¼ ½ 1 1½ 2

Style A.

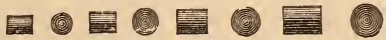
Loose, and can be used as Pellets.



Nos. ½ 1 1½ 2 3

Style B.

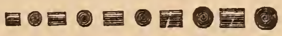
Loose, but more compact than Style A.



Nos. 1 2 3 4

Style C.

Compact, but not Hard, used as Cylinders only.



Nos. 2 3 4 5 6

These numbers are to denote that No. ½ is a half sheet of No. 4 Gold Foil cut into strips and rolled into cylinders. No. 1. one sheet; No. 1½, one sheet and a half; No. 2, two sheets &c.

Price, per 1-8 ounce	$4.00	Price, per 1 ounce	$30.00
" " 1-2 "	15.00	In lots of 2 ounces or more, per ounce.	29.00

DON'T USE

SIBLEY'S

Gold and Platinum Alloy

If after using it according to directions, it does not prove SUPERIOR to any other ALLOY or AMALGAM in the market.

DON'T USE

SIBLEY'S

Gold and Platinum Alloy

If it will not stand all tests essential to a FIRST CLASS FILLING.

DON'T USE

SIBLEY'S

Gold and Platinum Alloy

If it DISCOLORS in the mouth.

DON'T USE

SIBLEY'S

Gold and Platinum Alloy

If it SHRINKS OR EXPANDS.

USE

SIBLEY'S

Gold and Platinum Alloy

If it PROVES to be the BEST but not otherwise.

——MANUFACTURED BY——

GIDEON SIBLEY,

13th and Fibert-Sts, **DENTAL DEPOT,**

PHILADELPHIA, PA.

Send $1.00 for 1-3 oz. Sample Package.

GIDEON SIBLEY,

MANUFACTURER OF

ARTIFICIAL TEETH,

AND DEALER IN

DENTAL SUPPLIES

Thirteenth and Filbert Streets,

PHILADELPHIA, PA.

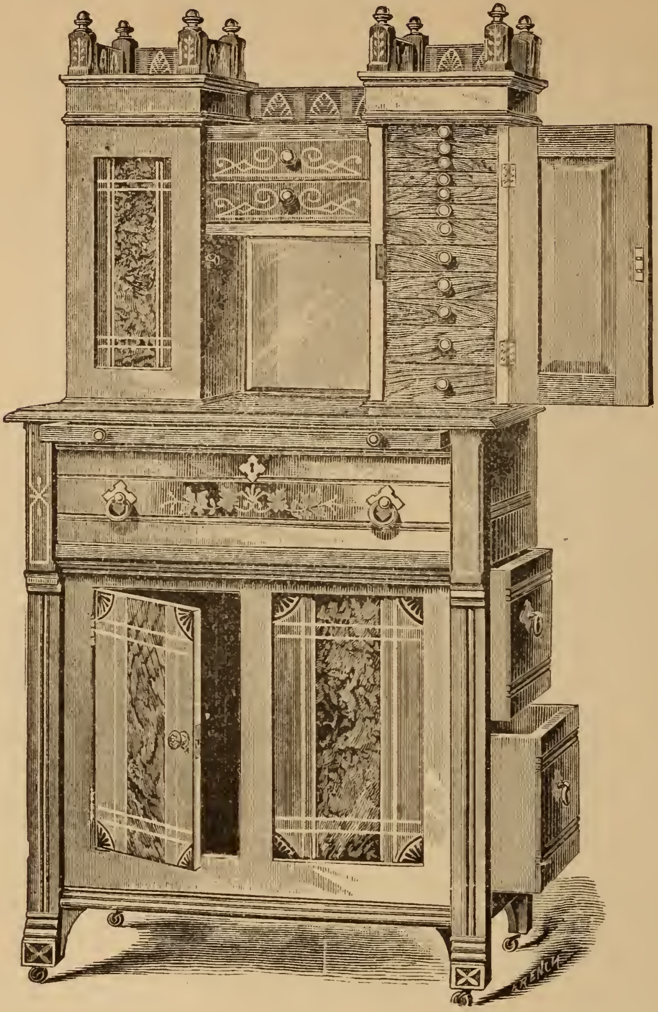
It is gratifying to find, that after years of assiduous labor to produce the best Tooth made, that their superiority is so universally acknowledged and that the rapid demand for them has necessitated large additions to our FACTORY AND SALESROOM.

POINTS ON WHICH WE SEEK COMPARISON.

Strength, Natural Shapes, Texture, Colors, Large Double Headed Pins, &c., Combined with our very large assortment of Moulds and Variety of Shades.

Ask your Dealer for them, or send One Dollar for a sample set.

Improved Cabinet Case No. 10.



This Cabinet Case is made of black walnut, hard oil finish. The panels are French veneer, and the mountings are all nickel plated. The total height is 5 feet 2 inches; width, 31 inches; depth 20 inches. The upper portion has 12 drawers, 7½ x 7½; 6 of these are ½ inch deep; 4, 1¾ inches deep; 2, 2½ inches deep. A door closes over all these drawers. On the opposite side is space same size, with adjustable shelves for medicines. Connecting the two parts above are 2 drawers, 10¾ x 12½, by 3 inches deep. Below these drawers is a beveled plate mirror, 10 x 10. The lower portion contains one drawer in front, 25 x 16, 5 inches deep, with slide drawer over it 25 x 16⅓ by ½ inches deep, lined with felt cloth. At one end, 2 drawers, 14½ x 13½, 9 inches deep. In front is a closet, 20 x 16, 12 inches deep, with shelf.

PRICE, (Boxing Free) - - - - -	$45.00.
" With Italian Marble Slab, - -	50.00.

Manufactured by RANSOM & RANDOLPH, Toledo, Ohio.

BRANCH : 29 Circle Street, Indianapolis, Ind.

A. R. LUKENS. Established 1866. J. WHITTINGTON.

LUKENS & WHITTINGTON,

OUR
Instruments
Are Warranted
First Class

All kinds of
Repairing
Carefully
attended to.

SEND for PRICE LIS

DENTAL
Supplies
of All Kinds.

ORDERS
Will Receive
Prompt
Attention.

626 Race Street, PHILADELPHIA, PA.

Phosphate of Zinc Cement.

PREPARED BY

DR. C. N. PEIRCE,

The properties of this Cement have been well tested and not found wanting. It does not deteriorate with age. Directions accompany each package. It can be procured of dealers in dental supplies, and in quantity of the S. S. White Dental Manufacturing Co., Johnson & Lund, and of the manufacturer, 1415 Walnut Street, Philadelphia.

Price per Package, $2.00.

Liberal discount to the trade. For Sale by RANSOM & RANDOLPH,

Toledo, Ohio, & Indianapolis, Ind.

LAWRENCE'S AMALGAM.

This Amalgam has received the endorsement of the Profession at large for nearly forty years, which would seem to render any remarks as to its excellence superfluous. Retail price, Three Dollars per ounce.

Purchase only of reliable dealers, their agents, or of the inventor and *only* manufacturer.

AMBROSE LAWRENCE, 476 Columbus Ave., Boston, Mass.

SAMSON RUBBER

MANUFACTURED BY

EUGENE DOHERTY,

No. 444 FIRST STREET, BROOKLYN, E. D., NEW YORK.

WARRANTED TO BE

The Strongest, Toughest & Most Uniform Rubber Manufactured

It is the Toughest and Most Durable Rubber Made, Vulcanizes same as Ordinary Rubber.

Samson Rubber.

MANUFACTURER OF ALL KINDS OF

Dental Rubbers and Gutta Perchas.

REDUCED PRICES.

Price List of Dental Rubbers and Gutta Perchas.

No. 1 Rubber, per lb	$2 25	No. 1 Weighted or Amalgamated Rubber, per lb	$4 00
No. 2 Rubber, per lb	2 25	No. 2 Weighted or Amalgamated Rubber, per lb	4 00
Samson Rubber, per lb	2 75	Black Weighted or Amalgamated Rubber, per lb.	4 00
Black Rubber, per lb	2 25	Adamantine Filling or Stopping, per oz.	4 00
Flexible or Palate Rubber, per lb	2 75		
Gutta Percha for Base Plates, per lb	2 25		
Vulcanite Gutta Percha, per lb.	3 50		

NOTE.—The above Rubbers and Gutta Perchas will be furnished in pound or half-pound packages to any Dentist in the country on receipt of price, **with a discount of 10 per cent. on 10 pound packages,** and stating that they cannot get them at the Dental Depots in or near their places of business. Circulars giving full instructions how to use all of my Rubbers and Gutta Perchas, will be found in each box or package with the article ordered.

EUGENE DOHERTY,
417 & 419 KENT AVE., BROOKLYN, E. D., NEW YORK.

CAULK'S FILLING MATERIALS.

ESTABLISHED, 1877.

CAULK'S TRADE DIAMOND MARK CEMENT

GRAY. YELLOW. PRICE, $2.00. MEDIUM. LIGHT.

TWO COLORS.—Gray and Yellow, ... $1.50 per Package.
ONE COLOR.—Gray, Medium, Yellow, or Light, ... 1.00 " "

THIS COMPOUND NOW STANDS WITHOUT A RIVAL,

From five to seven years' test by Leading Dentists throughout the world has proved it to be all that has been claimed for it.

It is non-irritating, non-conducting, in harmony with tooth structure, has no shrinkage or expansion, will harden in water or saliva, does not deteriorate with age. Two or more colors blended together (in mixing) will produce any shade desired. The liquid does not crystallize. The universal verdict is that Caulk's Diamond Cement is the best. A fair trial will convince you.

Caulk's Par-Excellence Alloy.

This Gold and Platina Alloy is manufactured on a new principle. Saves teeth where others fail. By our new method of manufacture, there is no *guesswork*, the molecular change is controlled, making each and every ingot always and absolutely alike in its properties.
Price, in ⅓, ½, and 1 ounce packages, - - - per ounce $3.00; two ounces $5.00

Caulk's White Alloy.

Has been greatly improved Costing more to produce it. There is nothing equal or superior to it. Is of a peculiar grayish-white color. Is very *dense*, and so malleable that it can be malleted with the greatest ease. When properly manipulated with *Pure Mercury*, it will retain its color under all circumstances.
Price, ¼, ½, and 1 ounce packages, - - - - per ounce, $4.00; 2 ounces, $7.00

Caulk's Diamond Point Stopping.

This form of gutta-percha. having been in the market for several years, has stood the greatest test of all—that of time. It is regarded as the best preparation of its kind for filling teeth in the world.
Price, in ⅛, ¼, ½ and 1 ounce packages, - - - per ounce, (reduced to) $2.00.

Caulk's Hydraulic Pebbles.

This Cement is a chemical combination of some of the constituents of the Natural Tooth, and when properly manipulated has the bony-like characteristics of such material.
Price, Large packages, $2.00. Price, Small packages, $1.00

We make a specialty of manufacturing these materials for filling teeth.
Over fifteen thousand (15,000) dentists are using these materials throughout the civilized world. What better evidence do you wish of their superiority and excellence?

L. D. CAULK, MANUFACTURER and PROPRIETOR
CAMDEN, DELAWARE.
Sold at all Dental Depots.

THE ROBINSON REMEDY

A SURE CURE FOR

PYORRHŒA, ALVEOLARIS, AND OBTUNDER,
FOR SENSITIVE DENTINE.

PREPARED BY

SAM'L A. CROCKER & CO.,

Ohio Dental and Surgical Depot

CINCINNATI, OHIO.

DIRECTIONS:

Clean all the Calcareous deposit from the teeth with a thin, sharp chisel, pushing the chisel always toward the apex of the tooth, and clear down to the alveolar ridge ; make a fine rope of fibers of cotton by twisting it between the thumb and finger, a little larger than floss silk ; cut the ropes into the length desired to go round the teeth to be treated, and do not treat more than four or five at one time ; wet the ropes with the remedy and lay them on a napkin to absorb all that will come off, and place them round the necks of the teeth and push down thoroughly to the alveolar border ; when you have done one tooth do the next and remove the rope from the first and so on until all are treated.

As a rule one application will cure. If the teeth are loose, take a fine binding wire and wire them to the adjoining teeth that are not loose ; and in two or three days the pockets will all be closed and the teeth tight and well. For sensitive dentine and exposed pulps, wet a pledget of cotton and apply directly to the cavity—it will coagulate the serum in the tubuli and cut off all communication with the nerve and the operation will be painless.

SAM'L A. CROCKER & CO.

Price, 50 cents per bottle.

The Wilmington Dental Manufacturing Co.

MANUFACTURERS OF SUPERIOR

ARTIFICIAL TEETH,

MANUFACTURERS OF AND DEALERS IN

DENTAL SUPPLIES,

NOS. 1010 AND 1012 KING STREET,

WILMINGTON, DELAWARE.

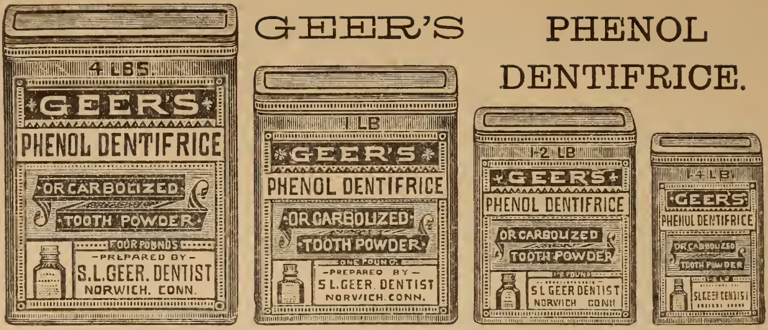
We would respectfully call the attention of the Dental profession to our line of DENTAL SPECIALTIES, more particularly our

ARTIFICIAL TEETH.

Their merits universally acknowledged by all who have used them.
We solicit comparison with any in the market.
Ask your dealer for them or send for *samples* and information to

THE WILMINGTON DENTAL MANUFACTURING CO.,
Wilmington, Delaware.

GEER'S PHENOL DENTIFRICE.



CARBOLIZED TOOTH POWDER.

This preparation is of inestimable value in *preserving* and *beautifying* the Teeth, *strengthening* the Gums and giving pleasant fragrance to the Breath. It prevents and arrests decay, polishes and preserves the enamel to which it imparts a pearl-like whiteness. Its unprecedented success for ten years shows the universal favor in which it is held, while the fact of its being compounded of the choicest materials, selected with extreme care, constitutes it the purest and safest tooth powder now in use. Put up in

4, 1, ½ and ¼lb. Cans.	$1 ⅌ lb.
Trial Package, ⅛lb., postpaid for 15 cents.	10 lbs., 90 cents ⅌ lb.
	20 " 80 " " "

Sold by RANSOM & RANDOLPH,

Wholesale and Retail,

Toledo, Ohio, and Indianapolis, Ind.

UNIVERSITY OF PENNSYLVANIA.

DENTAL DEPARTMENT.

This department will open with a short Fall Course, commencing Sept. 14th. The *Regular* or *Winter* session will begin October 1. The Commencement will take place May 1, 1886.

QUALIFICATIONS FOR GADUATION.—The Candidate must be 21 years of age. Two full courses of lectures at the *Regular* or *Winter Session* will be required. Students who have attended one full term in another dental school, recognized by the faculty, will be admitted to the graduating class upon presentation of the required certificate.

Students holding a medical diploma can enter the senior class, but will be required to spend a year in the practical departments,—the year to include the regular winter's course.

A preliminary examination in English branches will be required for entrance to the junior year. This will not be demanded of those presenting properly attested certificates from colleges or recognized schools.

GRADUATION IN MEDICINE.—Dental Students wishing to take the degree in Medicine, can do so in three years from the beginning of their studies, but must give notice of such intention during the second year.

EXPENSES, FIRST YEAR, MATRICULATION,	$5 00	TOTAL FEES	$245.00
GENERAL FEES,	100 00	EXPENSES MEDICAL DEGREE, MATRICULATION MEDICAL DEPARTMENT	5.00
	105.00	TUITION FOR JOINT MEDICAL AND DENTAL STUDIES SECOND YEAR	190.00
EXPENSES SECOND YEAR, GENERAL TICKET	100.00	THIRD YEAR MEDICAL COURSE	150.00
DISSECTING TICKET	10.00		
GRADUATION	30.00		
	140.00		

Every student is required to provide his own instruments, except those for extracting.

Those desiring further information will apply to **JAMES TRUMAN,**

Secretary Department of Dentistry, of the University of Pennsylvania.

Thirty-sixth Street and Woodland Avenue, PHILADELPHIA.

THE DENTAL COLLEGE
OF THE
UNIVERSITY OF MICHIGAN.

The Eleventh Annual Session of this Institution commences on the 1st of October and closes on the last Wednesday of June, thus making a course of nine months. The regular course of instruction begins at once, and will proceed through the term, with the customary vacation.

The students in this department will receive instruction in Anatomy, Physiology, Pathology, Chemistry, Materia Medica, Therapeutics, and Surgery, from the Professors of their respective branches in the *Department of Medicine and Surgery* of the University, when lectures commence, and continue the same as with the Dental College. There will also, in addition, be a special course upon each of these branches, which will embrace from ten to fifteen lectures.

FACULTY OF THE DENTAL DEPARTMENT.

J. B. ANGELL, LL.D.,	President
J. TAFT, M.D., D.D.S.,	Principles and Practice of Operative Dentistry
CORYDON L. FORD, M.D., D.D.S.,	Anatomy and Physiology
J. A. WATLING, D.D.S.,	Clinical Dentistry
W. H. DORRANCE, D.D.S.,	Prosthetic Dentistry
MARGARET HUMPHREYS, D.D.S.,	Demonstrator of Clinical Dentistry

Special instruction will be given in Dental Pathology, Oral Surgery, Dental Therapeutics, and Diseases of Women and Children, with reference to the teeth.

Students should be promptly present at the College Wednesday Sept. 30th, to take the preliminary examination, and make arrangements for entering upon regular work. Seats in the lecture room are assigned to students in the order of registration on the Steward's Books; and each student is expected to occupy during the session such seat as he may select. Students, on arriving in Ann Arbor, should call at the Steward's office.

CONDITIONS OF GRADUATION.

The candidate must be twenty-one years of age. *He must furnish satisfactory evidence of good moral character.*

He must devote three years to the study of his profession. He must attend two full courses of lectures in the Dental College, or one in some college having an equal standard of requirements, and the last one here, and we recommend that he attend three courses regularly.

He must sustain an examination satisfactory to the Faculty in all the branches taught.

A graduate of the Medical College may enter the Senior Class, and, if found qualified, may graduate after two years have been devoted to the study of dentistry.

FEES AND EXPENSES.

The fees, which must be paid in advance, are as follows:

RESIDENTS OF MICHIGAN.—Matriculation fee, $10.00; annual dues, $25.00.

NON-RESIDENTS.—Matriculation, $25.00; annual dues, $35.00.

GRADUATION FEE.—For all alike, $10.00. The admission fee is paid but once, and entitles the student to the privileges of permanent membership in any department of the University. The annual dues are paid the first year and every year thereafter while at the University.

For further particulars, address the Dean of the Dental College, Ann Arbor, Mich.

J. TAFT, Dean.

Indiana Dental College.

1885-86.

The next term of the Indiana Dental College will begin on Tuesday, October 6th, 1885, and continue until March, 1886.

The requirements for admission are a good English or common school education and good moral character.

Requirements for graduation, attendance upon two full courses of dental college instruction, the last of which must have been in this college.

Each candidate for graduation must be competent to practice dentistry intelligently.

Fees complete for one term	$100
Graduation Fee	25

No extras.

Good board near the college $5 per week including fuel and lights.

For announcements and full particulars, address,

J. E. CRAVENS, Secretary,
46 East Ohio Street,
Indianapolis,
Ind.

1845. 1885.

Ohio College of Dental Surgery.

An Institution of the Dentists and for the Dentists.

CINCINNATI, OHIO.

This Institution is *technically a School of Dentistry.* The property is owned and controlled by an association of dentists numbering nearly one hundred. The college building was erected and is used exclusively for the purposes of dental education. The Faculty is composed of dentists in actual practice, whose purpose is to give a thorough course of instruction in the theory and practice of dentistry. To this end the Lectures in all the branches taught, including Anatomy, Surgery, Physiology, Pathology, Materia Medica, and Chemistry, are arranged with a view to thoroughly qualify the student to *practice the profession of dentistry.*

Recognizing the value of clinical instruction to the dental student, the regular Course of Lectures will be supplemented by a thorough course of training in the Infirmary and Laboratory, under the direction of the professors and demonstrators. Clinics for instruction in Practical Dentistry will be given in the College Infirmary each afternoon and evening (except Sundays) during the entire session.

Cincinnati, through the medium of her numerous educational establishments for the promotion of the arts and sciences, her hospitals, dispensaries, libraries, public and private lectures, etc., affords superior advantages for a thorough education in any of the branches of the healing art. The large manufacturing interests of the city, which give direct employment to over one hundred thousand persons, makes the location of the Ohio College of Dental Surgery especially favorable for teaching practical dentistry. This large population furnishes the greatest variety of cases for clinical instruction, and a supply of patients in excess of the demand for practice in the College Infirmary.

The Fortieth Annual Session will begin the sixth day of October, 1885, and continue till March following.

FEES:

Matriculation fee (but once)	$5 00
Professors' Tickets for first session, whether Junior or Senior	75 00
Professors' Tickets for second year	50 00
Dissecting Ticket, including material	10 00
Analytical Chemistry	10 00
Diploma Fee	25 00
A member of the College Corporation may register his student for the Winter Session, whether Junior or Senior for	50 00

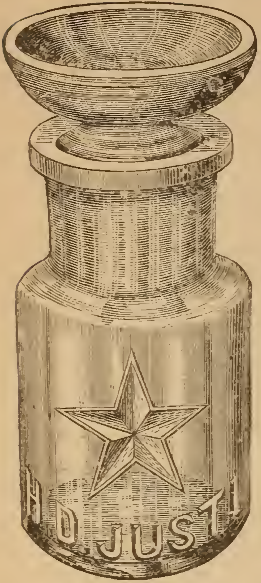
Special courses may be taken at proportional rates.

All tuition fees are to be paid *in advance.*

For further information, address,

H. A. SMITH, D.D.S., DEAN,
128 Garfield Place, Cincinnati.

H. D. JUSTI'S "ACME" CEMENT.



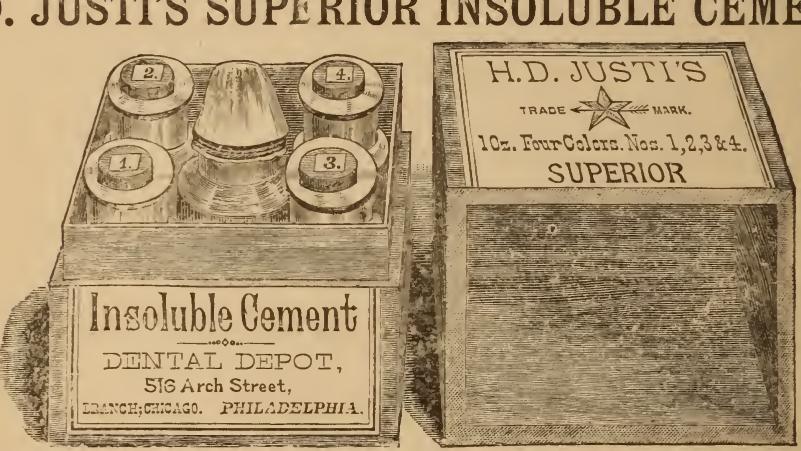
To avoid impositions which have often been practiced with my new German Cement, I call the attention of purchasers to my name and trade mark on every bottle.

Furnished in two colors—No. 1, a soft medium yellow; No. 2, a soft medium gray. These the most particular operator will find sufficient for the various cases presenting themselves.

PRICES.

One Ounce Bottle, - - - - - -	$3.00
Half-Ounce Bottle, - - - - - -	1.50
Set of both Colors, ½ oz, each, with 1 oz. Liquid. - - - -	3.00

H. D. JUSTI'S SUPERIOR INSOLUBLE CEMENT



It is made in four different colors, thus enabling the operator to produce any variety of shades, i order to match the patient's tooth.

No. 1—Light. No. 2—Medium. No. 3—Yellow. No. 4—Blue.

PRICES.

1 oz. box,	1 color,	No.	1, 2, 3 or 4,	$3.00
1 " "	4 colors,	"	1, 2, 3 & 4,	3.00
½ " "	1 color,	"	1, 2, 3 or 4,	1.50
½ " "	2 colors	"	1 & 2, or 3 & 4,	1.50

JUSTI SUPERIOR
Gold and Platina Alloy.

In offering this Alloy to the profession, I can say that it will do all that is claimed for it. It has been largely used by first-class operators and experts who have **thoroughly tested** its

SUPERIOR QUALITIES,

and I have no hesitation in pronouncing it the **best combination of metals extant,** being carefully prepared after long tests and careful experiments ; and the fineness of its grain which makes it so **dense** after being mixed is greatly due to the **crystallization** of the metals in the

PROCESS of its MANUFACTURE.

Its main points are:—

Sets very quickly and can be **finished shortly** after its insertion ; has good **edge**-strength, good **bright** color, and is **non-shrinkable.**

Price, $3.00 per ounce.

2 ounces, $5.50. **4 ounces, $10.00.**

H. D. JUSTI,

516 Arch Street,
PHILADELPHIA, PA.

BRANCH :
66 East Madison St., Chicago, Ill.

Great Reduction in Prices of Gas.

I continue to **REFILL** cylinders of **ALL MAKES,** as well as to **GUARANTEE** the **KEYSTONE VALVE** and the **WEIGHTS** of the cylinders as marked **ON THE LABELS.**

Dentists having **EXPERIENCED TROUBLE** and **LOSS** of **GAS** through **FAULTY** valves will find it to their **ADVANTAGE** to have them **REPLACED** by the **KEYSTONE** valve at a nominal cost.

4 cents per gallon in 100 gallon cylinders.
3½ " " 500 " "

COMPLETE GAS OUTFITS.

Surgeon's Case, with 4½ gal. gas bag and 100 gal. Cylinder filled, hereafter will be	**$37.75**
Surgeon's Case, with 7 gal. gas bag and 100 gal. Cylinder filled, hereafter will be	**39.00**
Univers. Tripod, with 4½ gal. gas bag and 100 gal. Cylinder filled, hereafter will be	**32.75**
Univers. Tripod, with 7 gal. gas bag and 100 gal. Cylinder filled, hereafter will be	**34.50**

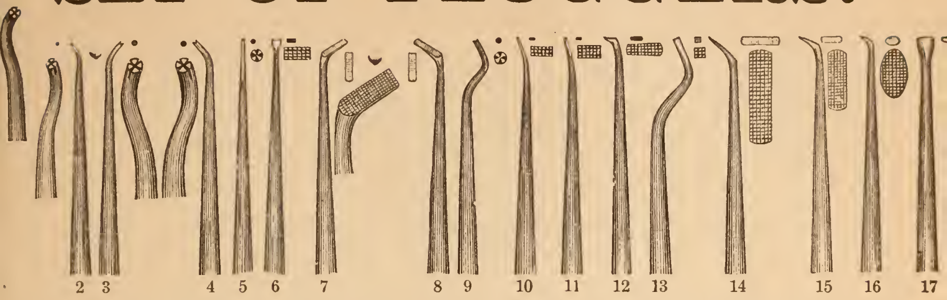
SEPARATE PARTS.

Cylinder containing 100 gal. gas	**14.00**
Cylinder containing 500 gal. gas	**39.50**
Re-filling 100 gal. Cylinder	**4.00**
Re-filling 500 gal. Cylinder, per gallon 3½ cents	**17.50**

H. D. JUSTI,
Dental Depot.
516 Arch St., Philadelphia.

BRANCH:
66 E. Madison St., Chicago, Ill.

Prof. J. A. WATLING'S
SET OF PLUGGERS.



This set of Pluggers was originally designed by Prof. Watling for his own use, and also for instruction at College, but he has made several alterations and modifications since (of which the above representation is the latest and most correct), reducing the points considerable in thickness, so as to avoid the unnecessary bulk which most Pluggers possess, leaving sufficient material, however, to insure strength. The serrations are also much finer than before, making the set a valuable addition to a dental office. In the above cut the number of serrations contained in each instrument are shown magnified. The small cuts represents the exact size of each point.

Prof. Watling's description of their separate uses is as follows: Nos. 1, 2, 3 and 4, commonly called "Cork Screw," or "Cow Horn," Right and Left Instruments, will be found useful in filling most of the approximate cavities, where they are deep, with access not very free. No. 5 may be used for filling starting points and small cavities, where access is direct. No. 6 is straight and very finely serrated, and may be used where access is direct, and great solidity of gold is desired. No. 7 and 8 are Right and Left foot Instruments, for working on approximal and posterior Bicuspid and Molar cavities. No. 9 is small, round, and bayonet shaped, and will be found useful in many of the posterior cavities. Nos. 10 and 11 are slightly curved, only differing in size; they are thin on the point, and very finely serrated, designed to work around the border of cavities and for filling fissures. No. 12 is a fine foot shape. No. 13 is a large bayonet-shaped instrument, useful in filling posterior cavities. Nos. 14 and 15 are different sized foot instruments. No. 16 is a small, very oval-faced, foot instrument. No. 17 is a burnisher.

PRICES

As shown in cut; blue lacquered handles - - per set,	$16.75
As shown in cut; blue lacquered handles, separately, Nos. 1, 2, 3, 4, 5, 9, 17, each - - - - - - - - - - -	.70
As shown in cut, blue lacquered handles, separately, Nos. 6, 10, 11, 12, 13, each - - - - - - - - - - -	1.00
As shown in cut, blue lacquered handles, separately, Nos. 7, 8, 14, 15, 16, each - - - - - - - - - -	1.70
As shown in cut, Nickel-plated, per set - - - - - -	19.00
Octagon Taper end (Abbott's style), per set - - - -	12.75
Price of Morocco Case for same - - - - - - -	2.00

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Dental Depot,
No. 516 Arch St., Philadelphia

Branch, 66 E. Madison St.,
Chicago, Ill.

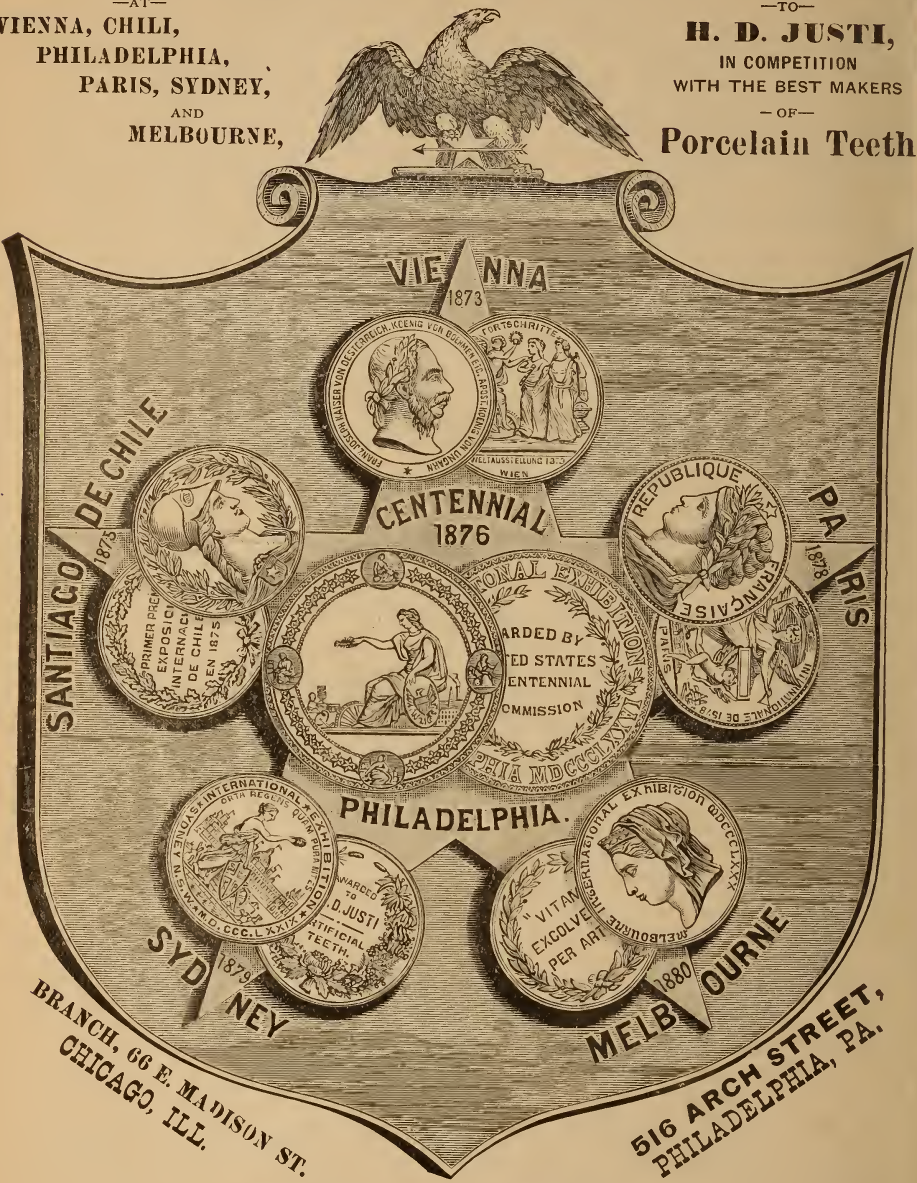
Six World's Fair Medals

OF THE

HIGHEST ORDER OF MERIT AWARDED FOR SUPERIORITY

—AT—
VIENNA, CHILI,
PHILADELPHIA,
PARIS, SYDNEY,
AND
MELBOURNE,

—TO—
H. D. JUSTI,
IN COMPETITION
WITH THE BEST MAKERS
— OF —
Porcelain Teeth



BRANCH, 66 E. MADISON ST.
CHICAGO, ILL.

516 ARCH STREET,
PHILADELPHIA, PA.

H. D. JUSTI.

SEND YOUR SUBSCRI

VOL. VI. FEBRUARY, 1886.

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH.
TOLEDO, OHIO.
Entered at Post Office at Toledo, as second-class matter.

$2.00 per Year, in Advance. Single Copy 25 cts.

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TO CORRESPONDENTS.

Communications intended for the Editor should be addressed to "DR. GEO. WATT, Xenia, O."

Subscriptions and Advertisements send to the Publishers,

RANSOM & RANDOLPH,
TOLEDO, O.

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VOL. VI. MARCH, 1886. No. 3.

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Mar. 1886
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Communications intended for the Editor should be addressed to "DR. GEO. WATT, Xenia, O."

Subscriptions and Advertisements send to the Publishers,

RANSOM & RANDOLPH,
TOLEDO, O.

Vol. VI. APRIL, 1886. No. 4.

Serial
F
64
Apr. 1886
copy 2

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH.
TOLEDO, OHIO.
Entered at Post Office at Toledo, as second-class matter.

$2.00 per Year, in Advance. Single Copy 25 cts.

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TOLEDO, O.

Serial

Vol. VI. MAY, 1886. No. 5.

A-
65

may 1886
copy 2

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH.
TOLEDO, OHIO.
Entered at Post Office at Toledo, as second-class matter

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RANSOM & RANDOLPH,
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VOL. VI. JUNE, 1886. No. 6.

Serial
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June 1886
copy 2

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH.
TOLEDO, OHIO.
Entered at Post Office at Toledo, as second-class matter

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TOLEDO, O.

Serial
A 6 7
5 July 1886
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Vol. VI. JULY, 1886. No. 7.

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
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TOLEDO, OHIO.
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RANSOM & RANDOLPH,
TOLEDO, O.

Vol. VI. AUGUST, 1886. No. 8.

Serial
A
68
Aug, 1886
copy 2

OHIO STATE JOURNAL OF DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
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TOLEDO, OHIO.
)ffice at Toledo, as second-class matter

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VOL. VI. SEPTEMBER, 1886. No. 9.

Serial
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Sept 1886

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH.
TOLEDO, OHIO.
Entered at Post Office at Toledo, as second-class matter.

$2.00 per Year, in Advance. Single Copy 25 cts.

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Subscriptions and Advertisements send to the Publishers,

RANSOM & RANDOLPH,
Toledo, O.

VOL. VI. OCTOBER, 1886. No. 10.

Serial
A
6 10
Oct. 1886
copy 2

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH.
TOLEDO, OHIO.
Entered at Post Office at Toledo, as second-class matter.

$2.00 per Year, in Advance. Single Copy 25 cts.

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Subscriptions and Advertisements send to the Publishers,

RANSOM & RANDOLPH,
TOLEDO, O.

VOL. VI. NOVEMBER, 1886. No. 11.

Serial
6
Nov. 1886
copy 2

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.,
XENIA, OHIO.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH.
TOLEDO, OHIO.
Entered at Post Office at Toledo, as second-class matter

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VOL. VI. DECEMBER, 1886. No. 12.

OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
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XENIA, OHIO.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH,
TOLEDO, OHIO.
Entered at Post Office at Toledo, as second-class matter.

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